The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXI, No. 9 CHICAGO, ILLINOIS AUGUST 30, 1913

A FINAL WORD TO THE FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION *

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NEW YORK

The duties and responsibilities of your presidents are such as to prevent them from addressing you frequently in your open meetings. That is why I avail myself of the courtesy of the Editor of THE JOURNAL, which permits me to deliver a brief valedictory to my friends all over the country and to add some remarks in connection with the subject discussed in the inaugural address[1] I delivered on June 4, 1912.

Advancing years have added to the greatness of the edifice called the American Medical Association. It has served you, its constituents; it has benefited the American people. From year to year its scientific work has expanded and its civic importance increased. Its Judicial Council and its councils on Health and Public Instruction, Medical Education and on Pharmacy and Chemistry, have submerged scores of inferior medical schools, enlarged knowledge, opened new horizons and fastened the links between all classes of citizens.

Not to lag behind my own obligations as a citizen of the land and a physician of the people, I tried a year ago to trace for you a part of the neglected congenital and earliest causes of the 17 per cent. of the early infant mortality, which trace their origin to embryonal and fetal life, and to the dangers of parturition and vicissitudes of the first days and weeks of the new-born. The vast number of infant deaths and the still greater amount of woman's invalidism and decrepitude were merely referred in part to social shortcomings, to the prevalence of the sickly incompetency which is called charity, to the lack of state or municipal responsibility, and to the inefficiency of medical and other service. Such service when inadequately rendered by doctors and midwives and nurses has been frequently and vociferously censured for its inefficiency.

Having shared in that kind of work part of these sixty years I bow my head with the rest of us, but I do not graciously submit to the reproaches heaped on the obstetric professors who always promise the achievements they expect in future of their medical students. On the other hand, I cannot agree with the complaint that when professors are teaching midwives, "medical students are deprived of their teachers' time"; nor do I fear with a modern author lest the midwife compete with the physician. That has been said in earnest, still it is only ludicrous. I want here to repeat merely the objects of English midwifery schools, which are "the care of the expectant woman, the conduct of normal labor, the care of babies immediately after birth, and the simple principles in an urgent case of artificial feeding."

At my time of life my opportunities to do good may not be many. That is why I refer in a few sentences to my discussion a year ago on what I considered the best means of combating infant mortality. The attention this topic has aroused has been close and various. Now a vast number of papers and pamphlets and books have been written to illustrate the subject of artificial feeding of the infant. It is no longer indicated, however, to rehash the fact that no less than 20 per cent. of the babies when fed on conscientiously selected artificial food will die before the first year of their lives terminate, while only 7 per cent. will be carried off when fed on human milk. In the brief space at my disposal to-day I shall not return to that topic.

I also directed your attention to the many causes of death acting before and immediately after birth, many of them not counted in mortality statistics. Indeed, officially, stillbirths are in most of our states not considered at all. One of those causes is the absence of proper attendance on the mother during pregnancy, and during and immediately after labor. I discussed the shiftless lack of attention paid to the expectant woman and to the necessity of teaching and licensing and supervising midwives.

I emphasize the subject again, thinking, as I then thought, that the communities and the commonwealths have no more important and beneficent service to render to themselves and to the nation, and that the President of your Association and the members of our profession have no more dignified duty than to contribute to the salvation and the well-being of the people. I have nothing now to add to my statements contained in THE JOURNAL[1] last year and the *Medical Record* and the *New York State Journal of Medicine* of the same date, and nothing to report which would amount to a criticism of a number of papers written since that time —a few directed against the position taken by me. Some are contained in the "Transactions" of the third annual meeting, held at Cleveland, Oct. 2-5, 1912, of the American Association for the Study and Prevention of Infant Mortality. I beg to insist on your spending an hour, every one of you, on the fifty pages dedicated to the chapter on midwives. If there you read in the paper contributed by an obstetric professor, as also in a similar production of his which appeared this year in THE JOURNAL,[2] about your President's "utter foolishness" in making certain recommendations, you must not, I hope, drift away from your knowledge of the advisability of hearing both sides.

* Publication unavoidably delayed.

1. Jacobi, Abraham: The Best Means of Combating Infant Mortality, THE JOURNAL A. M. A., June 8, 1912, p. 1735.

2. Ziegler, C. E.: The Elimination of the Midwife, THE JOURNAL A. M. A., Jan. 4, 1913, p. 32.

This I know: that last year I rose before you because I knew that neither you nor I had a more important interest or a more urgent duty than to look out for the necessities of the people, of which after all the professors are only a small and sometimes an insignificant part. In the opinion of my critic I have taken "a decidedly backward step" as regards both the teaching and practice of obstetrics; but in my remarks I never thought of obstetric teaching in the medical schools. A "backward step" would amount to a step into something like a nonentity. For he cannot help quoting an authority according to which only a single school in America has adequate facilities for properly teaching obstetrics to American students.

According to Abraham Flexner, thirty-one medical schools of the same high standard as one he mentions are needed in this country. To supply them thirty million dollars and from fifteen to twenty years at an annual outlay of three million dollars are required—so we are informed—for affording an adequate instruction in obstetrics to our medical students. These students must have the privilege of commanding, so it is asserted, all the material to practice on and to learn by. What is meant by "material"? Nothing else but the present and future mothers of your fellow-citizens. That is why the outlook in Pittsburgh with its recent combination of hospitals and dispensaries is said to be very promising. Promising of what? I said a year ago and say again that I do not care to wait fifteen or twenty years for the promise held out to future students or doctors whose primeval forest of ignorance is generally deplored by those who ought to know from their professional experience, and I repeat that I respect and urge the right to live, as much of the hundreds of thousands of women and newly born of to-day, to-morrow and a year from now, in the towns and in the rural inaccessible solitudes, as those who are to follow in twenty years.

In my inauguration address of last year I did not care to refer to the future instruction in obstetrics for the students of medicine in Pittsburgh and elsewhere, and for future practitioners. I dealt with the salvation by sufficiently instructed midwives now and forever, of women and their infants. My subject was confined to hundreds of thousands of them in the ghettos, the congested city quarters and the rural districts into which you and perhaps I do not easily descend; in which no doctor of skill and knowledge is tempted to locate. In Pennsylvania alone there are 100,000 births annually in rural places with no hospital near; with no opportunities for clinical services of large cities, and very few ill-prepared and overworked doctors.

The student question is another problem. For that opinion of mine a professorial oracle calls me a fool—an "utter fool," when it is he who unskilfully changes the topic under consideration and who clinched his arguments by merely quoting himself a second time literally and repeating his convictions of my "utter foolishness." If this is presented as an argument, it is a serious matter and not to be touched with a silk glove. My horizon and years extend beyond the pelvis of the poor woman of the large cities blessed with a medical school and an eager professor. It comprehends the necessities of what is called the student material, meaning the upper and lower classes of the people at large. But after all, I do not recognize the division of our people into superior and inferior classes. The superior rich are too often useless Americans. They have not even children. The so-called inferior create the wealth of America in children, in labor and in brains, and the back-bone of the land. These derided inferior classes, your "material," gave us the Lincolns, the Clevelands, the George W. Curtises and the Carl Schurzes.

What has the nation done for them? From an unprinted late report of the Committee on Blindness of the New York Association for the Blind, which I am permitted to use, I take the following facts:

Midwives are allowed by law to practice unrestricted in twelve states, Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Kentucky, Maine, South Carolina, Tennessee, Virginia and West Virginia.

There are no laws relating to the training, registration or practice of midwives in fifteen states, namely, California, Delaware, Massachusetts, Michigan, Mississippi, Nebraska, New Hampshire, New York, North Dakota, Oklahoma, Oregon, Rhode Island, South Dakota and Vermont. In the twenty-two states in which there are laws relating to midwives, fifteen require that they shall be licensed and that they shall pass an examination before being licensed to practice, while nine restrict the practice of midwives to attendance on normal cases. In no state is there provision by state law for supervision of midwives in their practice. In six states it is required that midwives shall be trained, but in no state are there any standardized schools. Only Bellevue Hospital, the Philadelphia City Hospital, where women are received for midwifery training on the recommendation of the board of medical examiners, St. Louis, and lately Newark, N. J., have schools. Meanwhile, so far as officially known, 34 per cent. of all cases of births in the whole country are reported by midwives. Unfortunately, however, the statistics are wofully incomplete.

Of other information I submit the following:

In 108 cases of ophthalmia neonatorum that are reported by various eye clinics, sixty-two patients were attended by physicians, forty-three by midwives, and three by neighbors. Of the sixty-two, prophylactics were used in fourteen; of the forty-three, in eleven. Out of eleven, six lost one eye, three were merely scarred, and three were blind. It so happened that all the cases of total blindness occurred in the practice of physicians.

Literature is getting too large. So many papers are published that nobody has time to read them. Everybody has just time to miss or forget, or to bury in waste-paper baskets, which profit of most of them.

Now, are our fault-finders correct? Are more babies saved, more women kept in health by a promise of erudite and well-prepared doctors of the future? Is sepsis of the lymph-vessels, the pyemia of the blood-vessels to-day prevented by promises? Even the German Empire has 15,000 cases and 5,000 deaths annually of puerperal fever. Prussia alone, 5,044 and 1,772, for the doctors in these countries are officially admitted to be immature, and the number of midwives, trained in a year, insufficient in numbers. They know how to keep accounts in Germany. There the deaths from puerperal fever are 35.1 per cent., compared with scarlet fever 7.8 per cent., diphtheria 11 per cent., and typhoid 14.1 per cent., and ours, no matter whether they are called puerperal fever or peritonitis, or nephritis, or pneumonia, are surely no less. After all, acknowledging the drawbacks of our social conditions, what I demanded was nothing but less work, less filth, less starvation, less physical and factory work of the pregnant woman and new mother, and altogether better social conditions. Indeed, more hospitals are required by those who cannot help preferring absence from their

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homes. After all, however, it is only the primipara that should be offered and accept a bed in the hospital. The woman with children belongs to her home, where her mere presence is wanted as a protection to her flock.

It is true, the Lying-In Hospital of the City of New York, which is the admirable creation of J. P. Morgan, has succeeded in aiding during 1912, outdoor and indoor, in 5,600 cases of confinement, but in the same year eight times as many confinements were attended by midwives, good, bad and indifferent.

Modern institutions like this, like modern Morgans, are welcome. I wish, however, there were no social conditions which make them necessary. Still I must wish there were more like them. After all, as you cannot have them, and not even enough professors or doctors to go around, be sure not to "eliminate"—that is the pet modern expression—the midwife, but to see to her municipal, state or national education, training, licensing and supervision.

FETAL PERITONEAL FOLDS

AND THEIR RELATION TO POSTNATAL CHRONIC AND ACUTE OCCLUSIONS OF THE LARGE AND SMALL INTESTINE *

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In the region of the caput coli and ileocecal junction, there appear frequently after the fifth fetal month certain peritoneal folds of fairly constant form and distribution which stand forth without manipulation and spread out so prominently that they can scarcely be overlooked. They are either anatomic or pathologic entities, and surely are not brought into existence by any artifice of traction or manipulation.

Frequently sheets or broad bands of serous membrane pass from the mural peritoneum over the front of the cecum and ascending colon, sometimes greatly lessening the caliber of this part of the large intestine. These are the bloodless fold of Treves and the parietocolic fold. The latter, according to Douglas Reid, was first described by Jonnesco. It resembles the pericolic membrane of Jackson as seen in children and adults.

Other fetal folds suggest by their position and attachments a causal relationship to gravitations and angulations of the terminal ileum. For example, the genitomesenteric fold described by Douglas Reid of the University of Cambridge, a fetal fold which passes from the mesentery of the terminal ileum down into the pelvis attaching below to the genital gland, bears an interesting resemblance to the so-called ileopelvic band, an anomalous band occasionally passing from the terminal ileum into the pelvis in the adult, to which Mr. Arbuthnot Lane ascribes an important rôle in the causation of Lane's kink. Figures 1, 2 and 3 show the genitomesenteric fold of Reid. These are photographic enlargements of smaller photographs sent to me by Mr. Reid, and are part of a set similar to that recently accepted by Professor Keith for the Royal College of Surgeons.

Reid's genitomesenteric fold is continuous above with the duodenorenal ligament of Hueschka, and we have here at least a speculative explanation of the kinking upward of the terminal ileum. Another fold not above suspicion in cases of upward displacement of the terminal ileum is the rather constant ileocolic fold which, if contracting, would draw the terminal ileum upward and toward the ascendong colon (Fig. 4). Likewise the so-called root folds, as the left or superior root fold shown in Figure 5, or the right root fold, the mesentericocecal fold of Jonnesco, which are ridge-like upward reflections of the mesentery, indicate the marked tendency to irregularities of attachment and upfoldings of the mesentery.

I have had little difficulty in finding Reid's genitomesenteric fold in fourteen out of thirty-two fetuses examined (Fig. 6). I have also been able to demonstrate it in the adult where it had caused a kink and where it had produced no kink of the ileum. By picking up the

Fig. 1.—The genitomesenteric fold of Reid. The white sickle-shaped band is seen passing from the terminal ileum down into the pelvis.

terminal ileum in an adult, a tall, sickle-shaped fold of peritoneum passing from the mesentery of the terminal ileum to the internal abdominal ring came up much too freely to admit of suspicion of its having been produced by traction. Reid likewise has demonstrated the genitomesenteric fold in the adult. Illustrations in one of C. H. Mayo's published articles show a band corresponding precisely to Reid's fold which he divided for the correction of a Lane's kink.

Mr. Lane[2] describes his ileopelvic band as a new or acquired distinct peritoneal ligament which attaches itself progressively to an area of the ileum more and more distant from the attachment of the normal mesentery. If Lane's ileopelvic band is not a persisting fold

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelope.

2. Lane, W. Arbuthnot: Brit. Med. Jour., May 4, 1912.

of Reid, it is an interesting coincidence that the fetal structure should be precisely similar in its position and attachments to the adult band; and if, as Mr. Lane says, and as I have no sufficient reason to question, this fold is due to a crystallization of forces to resist the descent or displacement of intestines, then this crystallization surely takes place in fetal development.

In the case of the genitomesenteric fold, a simple if somewhat suppositional explanation of origin is that in the descent of the right ovary or testis the dorsal peritoneum is caught and dragged or drawn out into this form.

There is considerable evidence to support the assumption that the bloodless fold of Treves begins as an adhe-

Fig. 2.—A genitomesenteric fold of Reid passing upward from the genital gland to the mesentery of the terminal ileum.

Fig. 3.—The genitomesenteric fold of Reid. A heavy band passing from the terminal ileum into the pelvis.

Fig. 4.—The ileocolic fold extending from the upper lamina of the mesentery of the terminal ileum around over the cecum.

Fig. 5.—The superior root fold (after Douglas Reid).

sion between the cecal head and the mural peritoneum, as shown in Figure 7, and that later in the act of cecal torsion the caput coli rolls itself, so to speak, in serosa drawn over from the very loosely applied peritoneum of the lateral abdominal wall, as a man rolls himself up in a blanket; for the bloodless fold of Treves may be found as a short band of adhesion, as shown in Figure 7, as a somewhat longer band as shown in Figure 8 (dissection of an adult by Reid), or as a sheet long enough to extend from the lateral abdominal wall, beginning at a point opposite or below the level of the cecal head, and extending upward and inward, to be attached to the mesentery of the terminal ileum, and forming a shirt-pocket-like fossa in which the caput coli and vermiform appendix may lie ensconced (Figs. 9 and 10). It seems fair to

Fig. 6.—The genitomesenteric fold of Reid is the sharp sickle-shaped band at the right of the picture. Laterally to this band is the bloodless fold of Treves passing from the mural peritoneum to the caput coli.

suspect that the parietocolic fold is formed by similar fusion at a higher level.

It may fuse with the peritoneum covering the caput coli.

I believe that the bloodless fold of Treves not rarely persists in the adult, and forms the boundary of a precolic fossa in which the cecal head and appendix may be tightly embraced (Fig. 9); and further, that during operations for appendicitis, it is likely that the caput coli with the appendix is not rarely shelled out of this anomalous peritoneal pocket; the peritoneal membrane, that is to say the bloodless fold of Treves, which forms the pocket, being looked on by the operator as an affair of adhesion formation.

Another rather common fetal fold which, persisting and contracting, may bind down the appendix or envelop it, is illustrated in Figure 11. Here a skirt-like fold

Fig. 7.—A beginning bloodless fold of Treves being formed by the stretching out of an adhesion forming between the caput coli and mural peritoneum before normal cecal torsion (after Douglas Reid).

Fig. 8.—A bloodless fold of Treves somewhat more fully developed than the narrow adhesion-like fold in Figure 7. (Enlargement of photograph by Reid.)

passes from the terminal ileum above, downward around the appendix, embracing the basal half of the appendix,

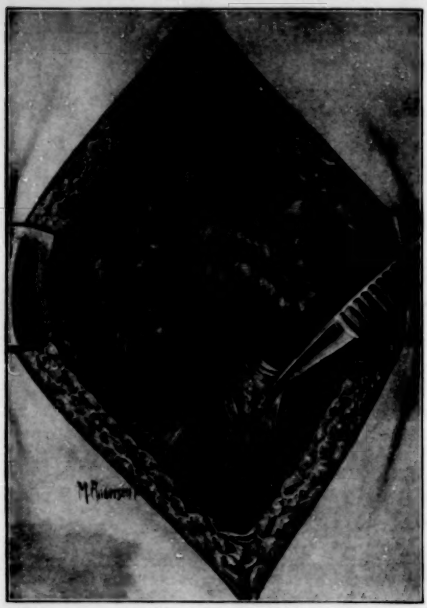

Fig. 9.—Above, the parietocolic fold of Jonnesco passing from the mural serosa across the ascending colon to the inner lamina of the meso-colon. Below to the left the bloodless fold of Treves forming a sconce from which in adults the caput coli must occasionally be shelled out. To the right below the genitomesenteric fold of Reid.

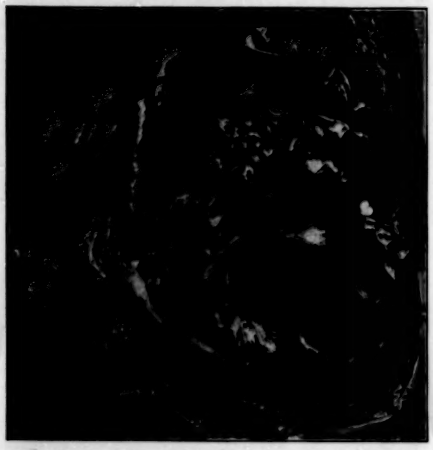

Fig. 10.—The bloodless fold of Treves passing from the mural serosa to the cecum.

and then passing upward is inblended with the serosa of the caput coli. The appendix rests in this fold like a man seated in a hammock, or like an injured forearm placed in a sling. (Fig. 11.)

Douglas Reid and Byron Robinson have called attention to adhesions of the colon to the peritoneum of its own mesentery. That is to say, along the

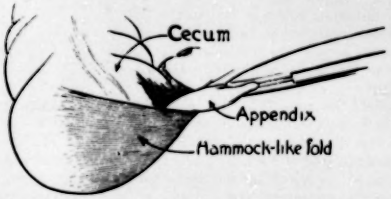

Fig. 11.—A fold passing from the terminal ileum around and below the vermiform appendix and passing upward over the caput coli. The appendix lies in this fold like an injured forearm in a sling.

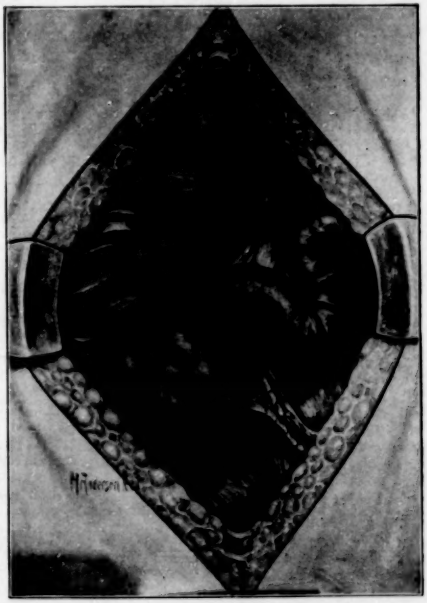

Fig. 12.—A parietocolic fold or Jackson's membrane which produced an acute complete obstruction of the ascending colon with ileus. Blood-vessels passed freely from this anomalous sheet over on the mural peritoneum.

line where the lateral mural peritoneum passes over to become the peritoneum of the outer lamina of the mesentery of the ascending colon, it first passes up for a short distance, as an upward reflected fold adherent along its upper border to the ascending colon laterally, then passing down and again upward and around over the ascending colon to form its normal peritoneal covering. I have

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seen in operations on the adult the peritoneum of the mesentery of the ascending colon reflected upward and adherent to the colonic peritoneum for a distance of 5 or 6 inches.

As it was also seen by Douglas Reid in the fetus, it does not seem unfair to suspect this upward reflection of the mesenteric peritoneum of being a persisting fetal adhesion. We have here presumptive evidence that Jonnesco's fold or the parietocolic fold is due to adhesion between the cecum and the mural serosa before cecal torsion has taken place, and that with subsequent rolling inward a sheet of peritoneum is drawn from the lateral abdominal wall as it rolls from left to right.

Reid describes two cases in which the parietocolic fold was formed by a large appendix epiploica. The first step in the development of the parietocolic fold and of the bloodless fold of Treves may be made clearer by assuming that before cecal torsion takes place a large appendix epiploica or several appendices epiploicae become adherent to the parietal peritoneum and elongate and spread out as the colon rolls over from right to left.

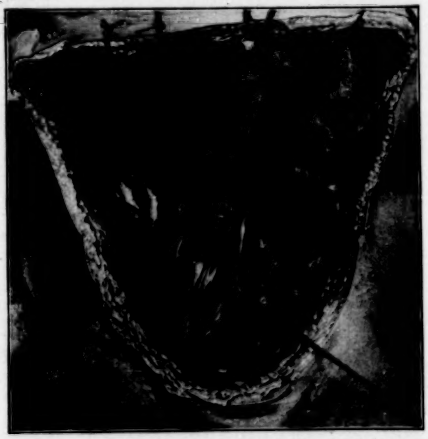

Fig. 13.—A parietocolic fold producing strangulation of an ascending colon in a fetus, a condition strikingly similar to that observed in an adult and illustrated in Figure 12.

So far as I am aware, however, no causes have as yet been reported in which a pericecal membrane completely strangulated the large intestine, producing acute obstruction with ileus. That extensive pericecal membrane formation may lead to acute complete obstruction was shown by the following observation:

REPORT OF CASE

Jan. 18, 1912, R. H., aged 24, was admitted to the surgical service of the Indianapolis City Hospital with a provisional diagnosis of acute obstruction of the bowel. On failure to obtain results from high enemas the abdomen was opened, and I was able to demonstrate a tight compression of the ascending colon, as illustrated in Figure 12. A distinct, smooth, continuous sheet of anomalous peritoneum was not present. The membrane was web-like, and to some extent loculated. There was little doubt, however, that it was an anomalous peritoneal covering which was continuous with and passed from the mural serosa, over the ascending colon, to be inserted in the inner side of the mesentery of the ascending colon, for the blood-vessels passed freely from the membrane onto the mural serosa. There was no sign of infection or inflammation anywhere in the abdomen. The membrane was split up with scissors on the operator's finger as a guide, passed between the anomalous membrane and the normal peritoneum of the ascending colon. The man recovered duly, and up to the present has had no recurrence of his trouble. I have twice seen in the fetus a pericolic membrane tightly compressing the ascending colon (Fig. 13).

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SURGICAL ASPECTS OF INTESTINAL STASIS, FROM AN ANATOMIC POINT OF VIEW *

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It seems to me that it would be like carrying coals to Newcastle to attempt to discuss the subject of intestinal stasis in any but a restricted sense. Much has been written about intestinal stasis, from the points of view of both the physician and the surgeon, but nothing of great importance has been added, throwing light on it, from the surgeon's standpoint, which has increased our knowledge beyond that which we received from Lane and Jackson. Lane may be an extremist and his surgery may need some toning down, but his deductions are based on sound premises. Jackson made a great discovery in his "pericolic membrane," and his clinical diagnosis of its presence and the attending pathology has not been improved—it is standard.

During the past year two notable papers have appeared, one by Flint, in the Johns Hopkins Bulletin, and the other by Rilus Eastman (*Journal of Surgery, Gynecology and Obstetrics*), read before the Western Surgical Association, which settle conclusively the mooted point as to the origin of the much-discussed peritoneal bands and membranes of Lane, Jackson, Jonnesco, Reid, Treves and others. They are all congenital and have been recognized and described by anatomists for generations, but that any one of them had a clinical significance other than in the formation of fossae for the possible development of retroperitoneal hernia, appears to have escaped attention until Lane and then Jackson recognized and demonstrated the fact. Lane himself says that after he had called attention to the mechanics of chronic intestinal stasis, the existence of the membranes and bands which he is pleased to designate "acquired mesenteries and adhesions" were "absolutely and categorically denied by physicians experienced in post-mortem work, who appeared to think that, because they had escaped their observation as many things have done and will continue to do, they were justified in denying their existence in the most dogmatic manner possible."

Last summer I had the opportunity of seeing and examining some of Mr. Lane's patients before operation, witnessing his work and examining and talking with some of his patients who were convalescent from operations for the relief of chronic intestinal stasis. So favorably was I impressed with the reality of the subject that during the past year I have sought every opportunity for enlightenment as well as a critical study of my own

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

patients, in order to come to some conclusion for myself as to the frequency of the membranes and bands considered responsible for the symptoms of intestinal stasis from its mildest to its most severe forms. In my experience as I have gained better opportunities for observation through longer incisions, I have come to the conclusion that membranes of the pericolic type of Jackson may be found in every abdomen, if not on the right side in the lower, middle, or upper quadrant, then in the lower left quadrant. We must ever bear in mind that in great measure, the relative relations and displacements of the viscera depend on the conformation of the skeleton, and that there are quite as great variations in the abdominal viscera as there are in the faces of their owners. As before stated, these delicate membranes which we find about the ascending colon, ileum, cecum, involving or not the vermiform appendix, have been described by anatomists for generations. It is the rule rather than the exception that when they do produce symptoms it is in adults, and not in children. Many times the adults are beyond 50 years of age, and up to the time of the commencement of the symptoms, there has never been a sign of anything wrong within the abdomen that could be attributed to the membranes. Therefore these membranes should be regarded as purposive rather than offensive. All of the different types of these membranes may early become offensive, producing angulations of the bowel with their necessary consequences. These instances are congenital defects the same as are cleft palate or supernumerary toes. Continued abuse of function, particularly of the cecum and ascending colon, results in loss of tone, and the membranous supports always present in greater or less extent in every individual, instead of being conservative, become restrictive in the same sense as I have shown elsewhere that the chest wall hinders the action of the damaged, tethered heart in adhesive mediastinopericarditis, and that the overlying ribs should be removed in order that the heart may functionate with less strain. Displacements and angulations of the intestines resulting from peritonitis, localized or more or less general, bear no relationship to any special clinical history, and each is a law unto itself; whereas the different disturbances connected with congenital membranes of the type under consideration all have a rather definite history, which can be recognized by the man of keen wits, and when the symptoms cannot be relieved by a careful study and regulation of the diet, and the use of a mechanical laxative such as paraffin, these cases become surgical. The last word has not been said as to the best technic to be followed in any individual case. Some of Mr. Lane's work appears too radical; among neurasthenics, I believe his technic of ileosigmoidostomy will sometimes fail if a catarrh of the mucomembranous type is present, unless there is added a fistula into the cecum for long-continued irrigation of the colon. In a paper which I had the honor to read before the Chicago Surgical Society, March 6, 1905, entitled "The Surgical Treatment of Chronic Mucomembranous and Ulcerative Colitis, with Special Reference to Technic," I advocated strongly the operation of Monprofit, in exclusion of the colon; it is known as "exclusion with drainage into the intestine," and is intended chiefly for obstructions in the colon. The ileum is divided far enough away from the ileocecal valve so that the divided ends can be implanted into the colon—the proximal end above, the distal end below, into the sigmoid or pelvic colon. In spite of theoretic objections to the contrary, the fluids from the excluded part of the colon drain through the ileocecal valve into the stump of the ileum, on into the sigmoid flexure. It would seem an improvement over this method of Monprofit's, if employed in chronic intestinal stasis, that instead of dividing the lower ileum, it be approximated to the sigmoid and two anastomosis openings made; between these openings the ileum should be occluded by a purse-string suture, and both limbs fastened to the sigmoid so as to close any opening that might permit of a loop of intestine becoming strangulated. In ileosigmoidostomy, reliance on Lane's last kink, congenital or artificially made, never appealed to me, because in this situation the intestinal wave is antiperistaltic, which was so beautifully demonstrated by Cannon years ago. This kink will hardly prevent a backward flow into the colon; if not competent to do this, the valve will dam back the accumulated feces above, since the *vis a tergo* and peristalsis have been removed by diverting the intestinal flow from the ileocecal valve.

Where the cecum and sigmoid are sufficiently mobile, an anastomosis between them seems a practical solution and a relatively mild procedure. The paper above referred to as read in Chicago was based on my experience at that time, of eight cases operated on for chronic mucomembranous colitis. Four had a Gibson fistula made into the cecum for irrigation, and two had, in addition, the ileum divided, the lower segment occluded and the upper implanted into the sigmoid. One of my operations was after the technic of Maisonneuve. In these operations the appendix was removed, as the mucomembranous colitis was supposed to be secondary to a chronic appendicitis. My knowledge and recollections to-day tell me that the true reason of the inflammation was an intestinal stasis (our old-fashioned auto-intoxication), a Jonnesco-Reid genitomesenteric fold aggravating the difficulty. Removal of the colon is too hazardous an operation if an intestinal exclusion operation can be carried out in a successful way. The cecum, especially when not supported by a parietocolic membrane, may be large and mobile. In 30 per cent. of adult people with a large mobile cecum, symptoms referable to this condition are clinically present. The symptoms are present *not* because the cecum is large and mobile, *but* because its walls are flabby and it has lost the power of emptying itself properly. The condition is corrected by a plication operation, supporting the cecum or not, as indicated. The common ptoses of the transverse colon, sometimes into the pelvis, resulting from neglected function of the congenitally weakly supported viscus, are well handled after the technic of Coffey. As a rule most congenital membranes of the pericolic type are best released at their loosest line of attachment by passing some blunt instrument under the membrane along this line and dividing it. In other cases in which greater mobility seems desirable, the compressed intestine should be rotated toward the middle of the abdomen until a white line is observed on the posterior lateral wall of the abdomen, which is the line of fusion of the colonic peritoneum with the parietal peritoneum after rotation of the ascending colon has been completed. This is also the attachment of the pericolic membrane to the parietal peritoneum, and is the strongest line of attachment of this *ligament;* it should be divided along this line. This will give the greatest amount of motility and require the least amount of peritonization.

Wherever the membranes of the type under discussion are situated, if tension be made on the attached hollow viscus in a direction continuous with the course of the blood-vessels and fibers of the membrane, a white line will always be observed; this is the ligamentary attach-

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ment of the membrane to the parietal peritoneum, or to the peritoneal investment of a solid viscus.

In our citizenship, made up of a heterogenous mixture, with "no thought for the morrow," like does not produce like in a possible totality. Sprouts, buds and offshoots appear in all grades of potentiality. Many more bodies are examined *in vivo* than in the deadhouse, giving better opportunities for comparison of the types of frequency of variations from supposed anatomic standards. The accumulating evidence offered by the study of the pathology of the living will make great strides in the recognition of normal anatomy before the end results of disease have obscured it.

I would like particularly to ask discussion on the following points:

1. If the Jonnesko-Jackson-Reid membranes are congenital, are they always more or less clearly demonstrable in every individual, should the incision admit?

2. Are the membranes purposive? If so, are they not intended by Nature as ligamentary supports—preventive of intestinal stasis rather than causative?

3. Therefore they should be divided only after they have become restrictive of intestinal function, from loss of nervous and muscular tone resulting from chronic intestinal toxemia.

4. Is the method of demonstrating the white line always reliable? If so, does not this in itself prove the congenital origin of the membrane and its physiologic importance?

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EASTMAN AND SUMMERS

DR. M. L. HARRIS, Chicago: For some time past I have been operating on a large percentage of my patients under nerve-blocking by means of some combination of novocain. Without going into a discussion of the advantages of local anesthesia over general anesthesia, I wish to call attention to the great advantage which local anesthesia has in affording opportunities in abdominal operations to demonstrate the origin of many symptoms which we have learned to recognize clinically, but which we have not always referred to the proper cause. After blocking the nerves of the abdominal wall and opening the abdomen, we may then reproduce, by a variety of procedures and manipulations, characteristic pains and thereby learn positively the cause of the particular pain in question. In operating in the region of the appendix it is easy to demonstrate that the appendix is insensible to any form of mechanical manipulation or injury. It may be crushed, incised amputated or cauterized and the patient gives no evidence of pain; but traction on the mesentery of the lower end of the ileum instantly produces the characteristic epigastric or umbilical pain of which many patients with chronic appendicitis complain. In the same way we can produce the sensation of nausea, and these patients can be made to gag and even vomit by certain manipulations of the mesentery about the appendix. We can reproduce the typical pains of inflammations of the other abdominal organs in this way. This is also true in cases of pericolic membrane of whatsoever nature. We can reproduce the same characteristic, general diffuse pains of which these patients complain, not by touching the pericolic membrane itself, because that is insensible, not by manipulation or making traction on the colon, which is likewise insensible, but by making traction on the membrane itself where it is attached to the parietal wall. This is true also of the gall-bladder and the stomach. What I wish to call attention to here is that the epigastric pain, the pain or sensation of nausea and vomiting, which is present in these chronic cases, is an intestinal pain, pure and simple. It is produced by injury to the nerves going through the mesentery. The diffuse pain, the general pain, is due to interference with the parietal nerves. In circumscribed adhesions the pain may be circumscribed, but it is due to involvement of the parietal peritoneum.

DR. H. A. ROYSTER, Raleigh, N. C.: Inasmuch as these papers have opened up the subject of peritoneal folds, I desire to call attention to what I think is an important addition to this question. Folds and kinks, membranes and veils, are the order of the day. So far those which have received names are on the right side. We have the Jackson veil, the Lane kink, and "cobwebs in the attic," but if we go farther and follow the large intestine around, we shall find that the splenic flexure gives us some trouble, and I wish particularly to mention the "sigmoid adhesion." Nowadays we think only of right-sided pain, or we try to account for the pain by finding something wrong in the right side of the abdomen. We do not know in any given case which adhesion is going to fit until we have opened the abdomen. I think that many of us are having a great deal of trouble to explain left-sided pain, particularly in the case of women patients, because the pelvis enters into consideration. My study was directed particularly to this subject of left-sided pain in women, and, on investigation, I found that the sigmoid played a tremendous rôle in these cases. The ovary was too often blamed for the trouble. When we opened the abdomen we found a condition which we did not suspect, and, more than that, one which we did not know at first how to deal with. The etiology does not bother us nearly so much as the solution. It does not matter much whether these pains are anatomic, physiologic or pathologic. They must be dealt with if they are causing symptoms. I would suggest, however, that these conditions, if pathologic, are simply exaggerations of an embryologic or a normal condition. The symptomatology of sigmoid adhesion is a rather negative one. An important point is that the patients complain of pain on the left side during defecation. They are more or less constipated, the constipation alternating with a mucous diarrhea in some cases. In women the question of pelvic pain enters largely into the consideration of the case, with or without the sigmoid adhesion. I have ready for publication a short paper dealing with this question and the methods of handling these adhesions. I first described it four years ago. It is merely a matter of cutting the adhesion across and then suturing in a longitudinal direction. This draws the sigmoid away from its abnormal or exaggerated normal position. This may explain many conditions on the right side; I have seen a distended large bowel due entirely to sigmoid adhesion, while lesions on the right side were not present. If you are considering these intestinal folds, look on the left side and you will find a distinct clinical entity which must be relieved.

DR. A. A. LAW, Minneapolis: I do not agree with Dr. Royster that we can ignore the etiology of membranous pericolitis. As scientific men we should investigate the etiology and attempt to solve it. It is a pity that we cannot all agree with Dr. Eastman's theories. I do not presume to advocate any one theory. We must give all the theories cognizance. If the embryonic theory is correct, why do we not find these membranes in children? I have never seen membranous pericolitis in a child. My youngest patient, and I reported thirty-one cases, was 18 years of age. This is significant, for it would seem that, with the large amount of abdominal surgery being done on children for other conditions, some observer would report finding membranous pericolitis. It is only after a mass of evidence has been presented and sifted that we shall be able to arrive at a definite conclusion. I have reported thirty-one cases of this pseudo-peritoneal membrane and in every one roentgenographic studies were made after the ingestion of bismuth emulsion by mouth or its injection into the colon. This number of cases is, of course, too small to be of much value, but some of the points learned from the study are valuable. In every one of the cases there was cecal atony and ptosis. In every one the cecum was in the pelvis. If cecum mobile was not present at the time of operation, it was created when these membranous bands were released. Whether this is of significance, whether this ptosis of the cecum antedated the formation of the membrane or not, I do not know. In every instance except one, gall-stones or appendicitis was present. This would seem to confirm Gérster's and Pilcher's contention

that the condition is due to a chronic poisoning secondary to fecal stasis in the cecum, for here with the dilated, atonic intestinal wall the musculature is unable to lift its fecal load over the hill of the hepatic flexure. This theory seems to me the most tenable.

DR. D. N. EISENDRATH, Chicago: There is absolutely no question that Jackson and Eastman have both made exceedingly valuable contributions to the subject. There is a pericolic membrane. Whether this membrane is of embryologic or acquired origin is an open question. I have come more and more to the conclusion, after observing a large number of cases clinically and making dissections not only on the human fetus but also on the dog and other animals, that this fold of Jonnesco is an embryologic structure which persists throughout life and which may give rise to conditions of undoubted pathologic significance. In about seventy laparotomies I have seen that this fold of Jonnesco is not, as Summers says, always identical with the colic mesentery. It is a separate membrane. In one of my cases the membrane passed across from the parietal wall of the peritoneum. It had the typical spiral twist and you could put a finger under the upper end of the membrane and lift it up separately from the colic mesentery. Since then I have observed it in a large number of patients who have not complained of any symptoms. On the other hand, I have operated on patients in whom this membrane caused a complete stenosis of the ascending colon. I think that there is no question but that this membrane is present in its embryonic form in almost every individual. Some surgeons may be impressed with the idea that Jackson's membrane is always a pathologic structure and strip it off violently, leaving many bleeding points. The patient will then surely have postoperative symptoms. There are a certain number of patients with chronic appendicitis who do not recover as we would wish them to do and these patients may have a Jackson membrane (fold of Jonnesco) which has undergone pathologic changes resulting in kinks or constrictions of the colon. Jackson and Summers both emphasized the point that one should not be content with a pin-hole incision, but should make an incision large enough to permit a good view of the entire ascending colon; then no pathologic condition which may be present and which otherwise may escape notice will be missed.

DR. J. N. JACKSON, Kansas City, Mo.: I have no fixed view as to the origin of these adhesions or bands; that is a point which awaits final determination. I have been amused to hear men say that this condition is congenital and therefore does not amount to anything. Doctors do not ignore a case of congenital club-foot, but try to remove this condition. Whether or not we regard the peritoneal fold as congenital, whether or not it is this fold which Dr. Eastman described, we know that it is a membrane holding down the intestine and that the one thing to do, therefore, is to make traction on the bowel and where the line shows sever the membrane and ligate the stumps to prevent a recurrence of adhesions when healing takes place. On the other hand, if the theory of Gerster is correct, that there is primarily a colitis and that the disease begins on the inside, the membrane should be cut in the same way and stripped off, because otherwise the condition cannot be cured and there is always the possibility of reproduction of the membrane. It is evident, then, that we must deal with the factor of the reproduction of that membrane. Hall's theory was that it was not a colitis, but a condition due to the passage of toxins through the bowel, which lifted the peritoneum and resulted in the formation of this membrane. If it be due to anything that started within the bowel, we must do something more than divide the membrane. We must make a cecal fistula, do an appendicostomy, a short-circuiting operation or a transposition of the cecum into the upper rectum; even though the ileum be shifted, this material will be brought back by antiperistalsis, which should be excluded; this procedure is therefore not always effective. The cecum has no membrane ordinarily that would cause a collection of gas and a distention of the bowel, and thus produce traction of the peritoneum which produces the symptoms which I described.

DR. J. R. EASTMAN, Indianapolis: I agree in the main with what Dr. Law has said. He has an erroneous impression, however, as to my conception of the origin of pericecal membranes. I never have been so bold as to contend that the discovery of these folds in the fetus alone explains the origin of the adult pericolic membrane, or of Lane's kink. These ideas are submitted as evidence and not as established and complete proof. I did present three somewhat original conceptions, however, which I think are worth remembering as we proceed further with the study of this subject. If I were asked to state as briefly as possible the causation of the pericecal membrane I should write down "the fetal folds plus x," and make the "x" quite large. We believe the fetal folds to be factors. When one sees repeatedly in the fetus the adhesions between the caput coli and the mural serosa before cecal torsion through the arc of 180 degrees has taken place, when one sees it at a later stage somewhat more developed and again at still a later stage as a broad band of serosa, one cannot resist the impression that the fold is drawn out from the mural serosa by the internal rolling of the cecum. Again, when one sees so frequently in the fetus Reid's membrane or fold passing from the terminal ileum down into the pelvis, connecting the terminal ileum with the genital gland, one cannot resist the impression that this genitomesenteric fold bears some relationship to the anomalous bands seen in the adult, to which Mr. Lane has given the name of ileopelvic bands. Another point concerns the so-called bloodless fold of Treves. It is my conception that this membrane fuses with the caput coli and that many surgeons have seen it in the adult as a thin membrane tightly fitting over the caput coli and embracing the appendix. This thin fold, from which the appendix is often shelled by surgeons, is the persisting bloodless fold of Treves. It is frequently found in the fetus and no doubt often persists and is dealt with as an affair of adhesions during operations for so-called appendicitis.

DR. J. E. SUMMERS, Omaha: If Dr. Royster will read a recent monograph by Gray and Anderson of Glasgow, he will find his operation nicely illustrated and described. I said in my paper that, if you did not find peritoneal membranes of the pericolic type in the upper, lower or middle quadrants of the right abdomen, you would find them on the left side. By making traction you will find the white line in every person. By pulling on the sigmoid and drawing it toward the median line of the body, you will often find this white line. Dr. Law's cases are few in number and apparently he does not do much surgery on children. If you will examine a child's abdomen you will find the membranous bands there as often as you will find them in the adult. The only trouble is that they do not produce symptoms and are therefore overlooked. They are put there for purposes of support and produce no symptoms unless they cause angulation. If you do not look for them you will not see them, but they are there nevertheless in a considerable percentage of cases.

Operations for Stones in Bladder, Prostate or Urethra.—Steiner discusses the surgery of stones in the bladder, prostate and urethra in *Folia Urologica*, 1913, vii, 471. He gives the latest theories as to the pathogenesis of these stones but concludes that it can only be really determined by biochemical study of the intramolecular structure of the complicated combinations which form them. He gives in detail the indications for the technic of lithotrity and lithotomy, recommends von Hacker's suture for the bladder and emphasizes the importance of examining the kidney function before any bladder operation. He has performed litholapaxy in thirty cases, suprapubic lithotomy in fifty-five. Of the former twenty-eight patients were cured, of the latter fifty-two. Two deaths among the latter were to be attributed to a prostatectomy performed at the same time. He has besides performed three operations for stone of the prostate and seven for stone of the urethra. Eight of these patients recovered, the two deaths being due to uremia. Altogether he has done ninety-five operations for stone of the bladder, prostate or urethra with cure in 93 per cent. of the cases.

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PRENEURASTHENIC AND PREINSANE CONDITIONS *

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LOS ANGELES

It is with a good deal of hesitation that I again present a subject on which I wrote two years ago. The longer I practice among the nervous and the insane, the stronger is the desire to have a hand in preventing their troubles rather than in curing them. The particular reason for this short paper is to bring out a full discussion of the question of prevention.

For a number of years when examining children I have tried to make up my mind as to what kind of adults they were to become. Results have been most disappointing in the main.

The disappointing thing was that I was not succeeding in finding, among children examined who were evidently not up to an average mental and nerve constitution, any classes or types of temperament to indicate their future neurologic or psychiatric dangers. To put it another way, after I had examined a given child, I found myself quite unable to tell the parents of that child what might be hanging over its head in the way of disease. This has been and is a woful lack. The parents knew and I knew that the child was not average. I am not now speaking of the high-grade idiot or imbecile or even of cases of much-retarded development, but of children who would pass for normal on casual observation, or who were considered as slightly queer. I lacked the knowledge which would allow me to say, "Your child has a temperament and constitution which is likely to make him insane or a neurasthenic in the future unless you understand him better and take such and such precautions." The parents had brought the child to me for expert recommendations as to their handling of it. They wanted something accurate and concise. My recommendations were diffuse because my basis for them was hazy. What I needed was a concrete notion of preneurasthenic and preinsane conditions in childhood, just as the tuberculosis expert has his clear idea of the pretuberculous habitus. No such concrete notion could be obtained from the literature at my command, so it had to be constructed. When an adult sufferer from neurasthenia or mental disease presented himself for examination, I went as far back as possible in his childhood history to determine his mental constitution and temperament before his illness asserted itself. I went to both pedagogic and pediatric literature for help.

The result has been the three loosely constructed types which I tried to delineate two years ago,[1] and to which I can add very little at present. My excuse for again presenting them is the importance of the prevention of nervous and mental disease in coming generations. They are not perfect. Perhaps there is no possibility of the general recognition of nervous and mental tendencies the same as we now detect tendencies toward tuberculosis. I want to know the opinion of the Section on this question.

There is at least one other reason for going over this ground again. There has been great activity in the matter of child hygiene among both laymen and the profession during the last few years. Men in general medicine, surgery, and eye, ear, nose and throat work have been studying along with teachers and school authorities to the end that abnormalities shall be corrected and future trouble averted. Over the world isolated specialists in neurology and psychiatry are also working. But, as a body, we are doing nothing so far as I know. Is it not time that we should officially record ourselves as trying to prevent as well as cure and relieve disease? To my way of thinking, this prevention can be based only on a better knowledge of child types—the soil on which, in later life, nervous and mental troubles develop. We must get this knowledge first and then we must pass it on to the men in general practice, to teachers, and to parents. The Section on Nervous and Mental Diseases of the American Medical Association is the logical fountain-head for this knowledge.

The three types I have begun to identify are as follows:

The Neurasthenic.—The neurasthenic adult is the logical result of a neurasthenic child or a normal child plus exhausting illness. Natural juvenile neurasthenia is clear-cut. On the physical side its symptoms are a general droopiness, poor standing balance, diminished expression of the face, and fatigue fulness or puffiness under the eyes. When arms are extended one will be held lower than the other and the thumbs will droop away from the rest of the poorly extended hands. Fingers twitch with irregular and slow motion, entirely unlike chorea, when the hands and arms are extended. An effort to stand erect causes an accentuated forward curve of the spine with a relaxed and protruding abdomen.

On the nerve side there is evidence of marked inability to accomplish, which is due to mental and not physical fatigue; an appearance of mental apathy which is not real, but is due to a queer combination of alertness with actual mental fatigue; a full appreciation of events and surroundings with a studied minimum of reactions to them, and abnormal sensibility to external impressions.

The Preemotional Type.—This type shades into and is often combined with the neurasthenic type. Children of the latter type, however, are usually well formed physically, while the preemotionals may show various physical stigmata frequently found with congenital mental disturbances.

The general distinguishing features between the emotional and the neurasthenic type are to be found in the study of the stimuli to which each type responds most readily. The young neurasthenic is seldom introspective. His stimuli are largely external. The future sufferer from mania, melancholia, hysteria, etc., responds to internal rather than external stimuli. Fear, ambition, love, hate, sorrow—all provide internal reasons for outward reactions, which at times become so prominent as to be labeled "unnatural." His existence is sthenic, not asthenic. He has a large range of interests and he keeps them all going. He is versatile and capable, intense in what he does and thinks, and vigorous in joy and sorrow.

The Predements.—These are the mental shut-ins. They are usually physically well built and admirable, while mentally "un-understood." Apparently happy and care-free, they often carry a hazy and terrifying knowledge of their own apartness from their associates. They are also characterized by a power to carry out their natural aptitudes with ordinary ability or even with

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. Moore, Ross: The Recognition of the Preneurasthenic and the Preinsane Condition in the Young, THE JOURNAL A. M. A., Dec. 23, 1911, p. 2079.

brilliancy, thereby covering up defects in reasoning power which may be immense. They are not easily fatigued, not emotional in the usual way, seized by fundamental emotions and held by them because of inability to react to further stimuli; unable to correct ideas by reason and observation, unable either to understand or to explain themselves because of this flaw of intellect which makes impossible the exercise of sound judgment; consciously, uncomprehendingly handicapped.

These are the three types. As described, the classification is very imperfect and possibly contains serious errors.

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ABSTRACT OF DISCUSSION

Dr. C. Eugene Riggs, St. Paul: The ultimate fact in this presentation is eugenics. Eugenics, like Banquo's ghost, "will not down." The child is the result of the forces of two ancestral strains. As one author has said, "Heritage is what we are, environment is what we have, training is what we do." Walter has described heritage as a method of reaction of the organism to the environment under which we live. The question is, Can this method of reaction be in any way modified? I believe that it can, Weismann to the contrary notwithstanding. Thompson cites the following instance: As the result of the inbreeding of two wheat plants, one subject to rust, the other immune, the hybrids were all subject to rust; but the inbreeding of these hybrids gave plants subject to rust and plants that were immune in the ratio of three to one. The surprising fact in this experiment, is this: that the plants that were immune to rust ever afterward bred true. This simply emphasizes a statement of Sir Thomas Clouston many years ago that there is an intrinsic tendency on the part of the individual to return to the normal. This tendency is not absolute, however. There is a certain class of defectives on which Nature has put her ban; I refer particularly to the feeble-minded. The nervous system makes its most rapid growth from the fourth to the seventh year. The brain of a child 7 years of age lacks but 2 ounces of the bulk and weight of the adult brain. The brain of a person 18 years of age has the full weight and bulk. Now, from birth until the child is 18 years old we have growth and development, and from 18 years to maturity, 25, we have development. In other words, before 25 we have the nervous system, like Kipling's ship, finding itself—coordinating itself, and bringing the whole organism into complete unity and harmony of action. Then again, from 12 upward we have the evolution of sex; also, somewhere about 14 we have the development of the intellectual, volitional and emotional faculties, the training of which means everything in the life of a child. Further, we know that if there is any weakness in the stock it will manifest itself during the adolescent period. It is at this time that dementia praecox and various forms of manic-depressive insanity develop. Thackeray, Goethe, John Stuart Mill, and many others, passed through a period of depression during adolescence. The important point is that if we can recognize those types which Dr. Moore has called to our attention, if we are aware of the dangers, the quicksands, in this period, can we not in some way prevent the cerebral and nervous disaster that otherwise will follow? Certainly we can in a proportion of cases.

Dr. G. H. Moody, San Antonio: We all realize the importance of recognizing early the weaknesses of children in order to anticipate what may develop later. As a general thing, however, I believe that we have a tendency to let the matter drop after our discussions are over, and consequently little has been accomplished. If Dr. Moore can continue and work out a tangible plan to be universally accepted whereby early in the life of the child certain tendencies can be recognized and placed in certain definite groups as he suggests, a great step forward will have been made. If he can keep under observation and follow them up for a few years those cases that he has been observing, he will secure some information that will be of great value and give us something more tangible in the way of classification than we have had heretofore. If by certain groupings which he has suggested we are able to know positively that a certain child belongs to a certain group, and is therefore in danger of developing neurasthenia if not properly guarded, that another will develop the insane complication, and so on, it would help us a great deal in a definite way. I think we are inclined right here to be a little too vague and indefinite in our attempt to do something for these children.

As suggested also, general practitioners should take up the subject, as well as teachers perhaps later. Much has appeared in recent literature regarding the dementia praecox type, which is simply a differentiation of types at a later age. Dr. Moore's proposition to start early in the proper training of these children is a most appropriate and practical one and will prove a valuable addition to the steps taken in handling these cases. If we will closely observe children with these tendencies we shall find that the symptoms manifested even at an early age are in many cases quite definite and readily recognized.

Dr. Philip Zenner, Cincinnati: So far as my experience goes I do not know that it would bear out Dr. Moore's ideas but, of course, we do not ordinarily have accurate knowledge of the early childhood of our patients. If further experience should bear out Dr. Moore's ideas, and we could in many cases foretell that this child will develop hysteria, this one melancholia, this one neurasthenia, and this one insanity, there is one great harm that might result from such knowledge. If, as has been suggested, we not only know, but also warn teachers and parents of the dangers that will come to that child, the child might be brought up with the knowledge that this danger is before it; and I can conceive of hardly anything worse for a child than to be brought up with the knowledge that he is in danger of and must be specially protected from neurasthenia, insanity, or the like. As I say, that is the one practical danger that might ensue from those ideas becoming more clearly outlined in our minds.

Dr. G. Wilse Robinson, Kansas City: Much can be done by the medical profession, and especially by this particular branch of the medical profession, in the direction pointed out by Dr. Moore. A great deal of good work is being done by school inspection in our cities relative to the physical condition of the children, but practically nothing is being done in the way of examining the mental condition of children in the major portion of our schools. Every city should have a laboratory in which these children could be tested and examined for the purpose of determining their mental condition. We cannot perhaps determine accurately whether the tendency is toward hysteria, melancholia, neurasthenia, or dementia praecox; but we can say that the children are atypical and can advise the parents that there are certain lines along which they can be developed properly—certain lines of study that they can safely pursue and certain lines of occupation that they can follow, while certain other lines of education and occupation they cannot follow. All education is simply the development of attentive control, and when these children develop neuroses and psychoses the cure of these conditions usually resolves itself into education of attentive control. With proper development they will become useful citizens, while improper training makes them public charges.

Dr. L. Harrison Mettler, Chicago: I should like to speak a word of caution on this important subject. The title of Dr. Moore's paper reads "Further Notes on the Preneurasthenic and Preinsane Conditions." I do not suppose any of us will question the desirability of the closest study and careful management of the distinctly pathologic types of these conditions. My suggestion is that, in our pedagogic enthusiasm, we must be careful not to go too far and regard individuals as defective who do not conform to our personal standard of normality. There is a great and serious danger of this among the mild or border-land cases. In the history of the world, the originators of ideas and the instigators of progress have been people who were regarded as being a little "off" in their day. The development of civilization and human advancement are

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not primarily due to the average, so-called normal, man. The latter is rather conservative and does his part in holding things steady or in preventing retrogression. To the average, normal man, so called, new ideas seem strange, erratic and abnormal. He who brings forth these new ideas is usually atypical as an adult, and may have been atypical as a child; and it is an exceedingly difficult matter at times to differentiate an individual who is atypical merely in a sociologic sense from one who is atypical in a pathologic sense. Our whole system of public education is evidence of this. Sometimes it were better to let some of these apparently atypical children develop in their own way both for their own good and the good of the world. A dull, uniform mediocrity is not the goal of the human race.

Much here depends on the ability of the examiner. As in meddlesome midwifery, so here there is more danger of too much unintelligent interference than there would be in no interference at all. It may happen that a medical examiner's standard of ability may be quite below that set by the child for itself. The art-loving child may appear to be quite peculiar to the mere card-playing doctor. Again, children are sometimes rendered neurasthenic and hysteroid by their environment and stupid parents. Though the child may here appear to be atypical, it is the environment that is atypical for the child. Someone has well said that if half of the children were dismissed from the public schools and their places taken by their parents, a great improvement would be seen in the child-life of our nation, and, I am sure, much smaller number of atypical children would be met.

Eugenics is teaching us much nowadays. The science is still in its infancy. We must not dogmatize beyond the facts in hand. We must, as individuals and as a profession, learn more what mental health means for a given child and not adopt any fast and set standard, based merely on average mediocrity. This is a large task.

DR. W. W. GRAVES, St. Louis: Some one has said that in Nature there is no blind tendency toward perfection, and it seems to me that if we recognize and study types in a comparative way, eventually we shall be able to secure not only definite data by which we may recognize the tendencies of individuals and prevent disasters in their lives, but also information which may be applied in the begetting of offspring in a eugenic way. Let one go into a home for the feeble-minded, into an epileptic colony, or into an asylum for the insane if he will, and there he will meet with essentially different types of humanity from those which he meets in the common walks of life. More than that, if one studies in a comparative way the parents of the feeble-minded, of the epileptic and of the insane, and the near relative, he will often find similar types. The insane, the feeble-minded, the epileptic, are persons whose resistance to disease is inherently lowered; they are unable to adapt themselves to environment, and they succumb relatively early in life. If we can by the study of types learn to recognize what is the underlying factor in disease, if we can determine what are the factors in the life of the individual that cause him to be less resistant in the stress and strain of ordinary existence and make him peculiarly susceptible to disease, this will help solve the problem. We must soon recognize the necessity of studying human beings from the biologic point of view. The only conceivable fact underlying every function, whether it be mental, physical, or what not, is that without structure, function is not thinkable. We must therefore study human beings with the same sort of ideals that we study the plants or animals or any other living thing in Nature. While we have no such condition as normal for any living thing, we have ideals of normality, and those ideals are founded on harmony of structure, proportion of structure, and adaptation of structure to function. These factors enter into the point of view from which we should judge human beings. There is an old classical ideal, *Mens sana in corpore sano*. Persons who fulfil this ideal represent the good types of the race, types which we seldom find in insane asylums. Instead we find the abnormal types representing asymmetries, disproportion and disharmonies in development. If we study human beings as we study animals and look for the points of the ideal in their physical make-up, we shall have at once some basis for the determination of the resistances of the individual, not only to neurotic disorders, but also to disease in general.

DR. HOWELL T. PERSHING, Denver: We have two things to consider here. First, the general scientific facts concerning nervous children, and, second, the tremendously difficult problem of the individual nervous child. It seems to me that most of our work has to be done with the individual, and with him alone. There is a great barrier, as a rule, between the child and his elders. The height and thickness of the stone wall that sometimes separates father and son render it almost insurmountable. The average nervous child is a lonely child. He plays with his fellows, goes to school and talks with his elders, but there is much going on in his mind which he keeps to himself that would be important for his father or the doctor to know. All our conventions tend to repress self-revelation. In being educated into ordinary decency and morals, a child gets a terror of mentioning certain things. He is not going to lay bare his mind before any one, not even his father or mother. It would be a great advantage if to the proper extent we could establish communication between a wise elder—a *wise* one and not any one that happens to be in the schoolroom—and a sensitive, nervous child. With all this, we must respect the personality of the individual. There is a certain amount of reserve that ought not to be broken down. How far shall we go in getting into each individual's own mystery? And in it all we have to be exceedingly careful not to implant any morbid fears in the mind of a child. We must be careful not to give the nervous mother an idea that her child is going to be insane or even a neurasthenic, as Dr. Moore has said. This is an extremely difficult matter to deal with. I remember reading long ago a short story by Hawthorne which ended tragically, and, as I recall, the last sentence read something like this: "He had taken the delicate soul of a woman into his rude hands and crushed it." It is easy to take the delicate soul of a child into rude hands and crush it. It is easy to instill into the mind of a child ideas which will act as a veritable poison, and yet there may be ideas already acting as a poison which could be removed if the right person knew of them. So I try to encourage my youthful patients to feel that it is proper and safe to tell me of anything that troubles them in order that I may be able to help them. It is, however, a difficult matter at best.

DR. C. B. WOODSON, St. Joseph, Mo.: Children of the types under discussion should be dealt with not unlike others. To point out that a child is nervous, sending a note to mother or teacher to this effect with suggestions as to care, etc., is simply being meddlesome. The matter should be presented systematically to the parent; it is not necessary to say to the parent that the child will not develop into a strong individual mentally. The important thing for any child is to have good sanitary surroundings, proper nourishment, and a reasonable amount of exercise and play. All children should be taught the importance of bearing disappointment well. If the child goes into a rage because it cannot do the thing it wants to do, it makes no difference whether the condition is one of prenervousness or not, it gets the better of that child. Study along lines of special aptitude is perhaps one of the worst things that can be carried out, either in the case of a nervous person or one who is not nervous.

There is no reason why the offspring of a person suffering from a pronounced neurotic taint or history should become insane or be particularly nervous, if the right lines of education are followed out; but the individual who has this tendency or predisposition should not go into a business that would carry with it, for him, a hazard, for this would be sure to cause the development of depression and anxiety. He should be kept on safe ground. When we come to overloading, however, it matters not who it is, I maintain that when the load passes beyond the resisting capacity we can put on enough to crush the individual. Load the horse, the bridge, the wagon, the elevator, beyond resisting capacity, and the structure must be relieved or there will be a catastrophe. The

best thing to do in these cases is to establish close relationship of the parent if he is normal. If the parent is not normal it is better not to have this companionship. If the parent is so easily startled that the child tends to become timid, this makes the child nervous. If the parent is overexacting this makes the child nervous, although the parent is unconscious of it.

A liberal education regarding matters in general, in school, in business, in dealing with associates, etc., should be maintained as much as possible, and to overcome defects in the child it is highly important for the teacher to cooperate with the doctor to this end.

DR. ROSS MOORE, Los Angeles: The men in general medicine, or those making a special study of tuberculosis, are in a position to say that such and such things really constitute a habitus which predisposes a child to tuberculosis in the future. They can make a clear word-picture of this habitus. Their discussion would not have gone far afield, because there are certain definite ideas in their minds as to what constitutes a pretuberculous condition. A parallel to this is the gist of what it was my desire to bring before you in this paper. Instead of that, we have in the discussion reached a number of different points of view. The discussion indicates the state of mind which is present among neurologists and psychiatrists on the question of preneurasthenic and preinsane conditions. I am inclined to believe that the types which I have tried to delineate are inaccurate. They must be, because they are based on too small evidence. And yet the discussion has been sufficient to make me believe that something along this line might be done if we all went at it in the right way. The subject is a good deal wider than the paper. I wish not only to recognize these things to prevent disease in the future, but also to widen out the question of eugenics to the end that people who are peculiar in these ways will learn not to marry, or, at least, not to have children.

Nature would be a good mother, it is true, if only Nature could have the chance. In these days, however, Nature is so badly modified by what we call civilization, that we neurologists and psychiatrists really have a big field in which to help this good old mother. Interference, of course, which creates panic in the hearts and minds of parents is wrong. If, however—the doctor knows absolutely before he says anything to the parents at all that a child ought to go along such and such a line in his future development—then he has a basis in his own mind for a wise, just, kind, and thoroughly helpful recommendation to the parents.

Most of the adverse discussion which we have had here more or less revolves around the idea of our not doing the right thing by these children and by the parents. The reason that we cannot do it is simply that we have not the basis for it. Yesterday we found distributed here a notice from Buffalo inviting all the world to attend a meeting there in August which will deal with the welfare and instruction of children. A few days before I left home communication came to me through the mails giving the names of men all over the world who are particularly interested in this movement toward child hygiene. I was sorry to find few neurologists and psychiatrists among the number.

Compulsory Cleansing of Milk Receptacles.—According to the April *Bulletin of the Indiana State Board of Health*, a law was enacted by the last legislature of that state requiring the cleansing of milk-cans, bottles, etc., immediately after the removal of the milk therefrom. A similar law enacted in New York was upheld by the Supreme Court of the state, after being attacked on constitutional grounds. The court held that on account of the danger to be apprehended from the use of unclean receptacles for milk intended for human food, drastic measures to prevent the possibility of such use are reasonable and justified, and that it is clearly within the police power of the state to require dealers to wash bottles before they are refilled. With this precedent the Indiana law will probably not be attacked on constitutional grounds. It is a proper and reasonable regulation.

TEACHER AND LEARNER IN MEDICINE*

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We are to-day in the midst of a great unrest in American medical education, and the movement for a true teaching spirit in medicine is now irresistible. How shall we meet it, how help it on its course? I propose to assemble what seem to be the chief factors in our problem as teachers and learners, setting aside formal administrative questions, and dealing largely with the more personal and fundamental. Let us try, on the threshold of a new year of work, to catch this true spirit, in order that it may permeate all our coming endeavors.

In reviewing the experience of a student of twenty, fifteen, or even ten years ago, one is forced to wonder that medical teaching has lagged so far behind medical knowledge. When Vesalius struck down the centuries-old authority of Galen, and made anatomy a fabric of thought and action, he surely laid therewith the foundation of an effective mode of teaching and learning medicine. But such it was not to continue. Medicine germinated, and blossomed finally with Pasteur into a science. Medical teaching meanwhile wrapped itself in its medieval cloak, and for generations the student sat passive in the lecture room while the professor droned.

THE LECTURE AND PASSIVE RECEPTIVITY

The lecture method may in fact be used to furnish the key to the situation. We learn to see by seeing; to think, by thinking; to do, by doing. The plan in the old-time medical school was briefly this: the professor, having in the richness of his experience seen, thought and done, appeared before his students and told them things, often interesting, sometimes not. It was this passive reception of information about the work of others that gave validity to the student's degree. Yet not for a moment was it conceded that the lectures prepared the student to practice medicine. The student learned to practice medicine by *practice* in the old days, under the supervision of some one experienced physician; in later years, in the laboratory and clinic. All this has now become so clearly seen that we must accept the conclusion of Le Count[1] that "a medical school should be a place where medicine is practiced by students instead of a place where students prepare to practice." "These things," he says again, "are learned not by the telling but by the doing."

We do not need to confine ourselves to writers on medical education to find expression of the principles that should guide us. Reform is wide-spread, and some of the most telling and acceptable criticisms for us that I have met are from university and college teachers of other subjects. Nothing could come more directly home to us than the following comments of Alexander Smith[2] in connection with chemistry teaching:

> The lecture places the student in a passive and receptive attitude. Yet it is not the reception, but the reproduction of an idea that fixes it on the memory. The hearing of a story makes no permanent impression. It is only after we have retold the story that it suddenly leaps into a permanent position in our repertoire. The first hearing of an idea pro-

* Opening address before the Medical Department, University of Buffalo, Sept. 23, 1912.

1. Le Count: An Experiment in Medical Pedagogy, Science, 1910, xxxii, 942.

2. Smith, Alexander: The Rehabilitation of the American College, and the Place of Chemistry in It, Science, 1909, xxx, 457

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duces but a faint track in the brain. It is the putting together of this idea, in its original setting, and also along with new ideas, that converts the first faint track into a traveled road. Is it not one of the strong points of language study that the student must put together in an endless variety of forms, the limited number of ideas he is trying to master, and must do this by his own efforts? . . . If we had attempted to devise some method which should run contrary to all conditions for successful undergraduate instruction, we could hardly have invented a scheme which would be more certain to fail than that I am discussing. The main point is that we learn only by our own efforts, and not by watching the efforts of others. Some one has said that the college is a "gymnasium where the faculties of men are exercised and developed, rather than a boarding-house where the students are crammed with facts." We develop physical muscle by exercise. Is there any other way of developing mental fiber? Can we ever cause mental fiber to *develop* by dealing out ready-made ideas? It is a psychologically impossible process. . . . Let us beware of a method of instruction in which the facts are found, not by the student, but by the professor; in which they are arranged and related, again by the professor; in which the conclusions are drawn, by the professor; and the conclusions are finally tested, not by the student, but by the instructor.

I was interested some years ago in noting the student's attitude toward medical lecture courses, and found that the student, with his usual ingenuity, had devised various means of circumventing an admittedly useless demand on his time and patience. Of course, the problem was to pass the examination. There were various ways of doing it. Only one of these ways was to attend lectures and use one's own notes. Printed notes could be bought, often better than one's own. Notes could be borrowed. A "quiz-class" could be attended, where direct contact with a tutor lent a certain real value to the instruction. Rarely were accredited textbooks employed, though the miserly but handy "compend" often did its share. The men passed, often well. Some got highest marks without even knowing the instructor by sight. Passing in itself had become a finely specialized art. In a discussion of the lecture method undertaken at that time[3] I wrote as follows:

A system which thus encourages the art of passing must create for the student the delusion of a royal road. Moreover, the austerity of the informative lecture is not the austerity which develops effort, but is rather indulgence cloaked with severity; and the result is a form of parasitism. Lectures covering a subject in detail are the outcome of extended study and compilation on the part of the instructor; he gathers, systematizes and places at the disposal of his students what he thinks they need to know. It is food elaborated by professorial industry, found all-sufficient by the student and taken exclusively as a matter of economy. The student parasite adapts himself readily to this predigested diet: organs of independent acquisition disappear, being useless, while organs for appropriating the elaborated food develop prodigiously; and the process is consummated in the complete acquirement of the art of passing. No matter how much hard, self-denying work is done on material obtained wholly from lectures, the weakness remains. The student comes to regard the lecture as the source of all knowledge; and the apparent all-sufficiency of lecture information, emphasized by examination, deters him from independent effort. By avoiding certain subjects a student may complete a college career almost without once entering the library. He has never learned even the meaning of original sources and is consequently devoid of the power which their use alone can impart. As a lecture parasite he thrives as long as lectures thrive, and at the end has earned his merited reward—a surfeit of information; but the faculty whereby alone information is of any worth is rudimentary or wanting. Students taught chiefly by lecture become effectively trained in but one subject—the passing of examinations. As Huxley said, "They work to pass, not to know; and outraged Science takes her revenge. They do pass, and they don't know."

What Huxley[4] said in 1874 could be said in this country of most of our best medical schools in 1900, and is still true of any institution at which the student is fed, as Osborn[5] has expressed it, on "mental peptones." "The measure of a teacher's success," he remarks, "is the degree in which ideas come not from him, but from his pupils," thus summing up the main contention of his master, Huxley.

Let us not make the mistake of condemning the lecture because it has given us ill return for the sort of use we have made of it. It is not lectures *per se* that we must abolish, but a certain educational fallacy, already indicated, to which the lecture method has proved the easiest prey. Knowledge that is power cannot be gained by passive, sponge-like receptivity.

"Knowledge by suffering entereth." Knowledge is a strife. Hence the motto of our new teaching is one entirely inconsistent with merely informative instruction. It is well put by Jackson[6] in these words:

Never tell a student anything he can observe for himself; never draw a conclusion or solve a problem which he can be led to reason out for himself, and never do anything for him that he can do for himself.

CHARACTERISTICS OF GOOD TEACHING

The legitimate uses of the lecture are many and valuable. Get the student to seeing, thinking and doing for himself, and you have in the lecture-room a rare opportunity to give direction and unity to his work, and to impart stimulus—perhaps inspiration. The lecture, relieved of its undeserved incubus, takes its place as a useful adjunct.

Let it be remembered that there is not a single method of teaching that we can employ into which the fallacy of passive receptivity cannot in one form or another find entrance. If laboratory experiments are followed by rule of thumb—mere tasks for the hand and the note-book; if dissections are made as perfunctory demonstrations of memorized pages of anatomy; if the clinic is "attended" merely, instead of being *used;* if treatments are prescribed as inevitable sequences to given diagnoses—if any or all of our vaunted methods of "practical" instruction lack that reasoning, problem-solving strife for knowledge that alone begets the faculty to do, to do well, and to win—we are still harboring the insidious infection that we sought to exterminate when we burned or otherwise sterilized the lecture system. I once overheard one student ask another, in one of the best courses in pathologic histology given at that time in this country, "What are we required to see?" That student expressed in six words all the blindness of the middle ages and the arch-heresy of modern science. If a student has ever looked into his microscope and wondered what he was "required to see," let us hope that he may have changed his mental attitude when, as physician, he looks into his patient's throat.

This case is paralleled by one cited several years ago by A. A. Noyes of the Massachusetts Institute of Technology in his admirable "Talk on Teaching."[7] The

3. Pratt, F. H.: The Dangers and the Uses of the Lecture, Educational Rev., 1902, xxiv, 484.

4. Huxley: Universities: Actual and Ideal; in Science and Education, Essays.

5. Osborn: Huxley on Education, Science, 1910, xxxii, 569.

6. Jackson: The Improvement of Medical Teaching, Science, 1910, xxxv, 566.

7. Noyes: Science, 1908, xxvii, 657.

student came to his instructor "with the complaint that he couldn't do his problems because each one was different from the others." I am glad that he was not a medical student. "The good teacher is constantly trying to lead the student on," says Noyes, "but he refuses to carry him."

F. S. Lee[8] takes exception thus to a recently published laboratory manual of physiology:

> The most striking feature of the book is the elaborateness of the directions for laboratory work, something with which we in America are not familiar. The student is never left to determine a procedure for himself, but is told exactly how to do the thing desired. He must, for example, hold his scalpel thus and so, the verbal instructions being supplemented by a nearly life-sized picture of a hand holding the instrument. . . . In order to tell how to make a frog's muscle-nerve preparation two pages of text are required and two additional pages of life-sized illustrations.

Lee concludes his review with the following quotation from one of the Carnegie reports:

> If, then, physiology is to be taught as an experimental science, as a science of function, the student must be allowed to run risks, to calculate, to observe, to verify, to conclude. Eliminate risk and the experiment becomes a mechanical toy: it may amuse, it does not discipline.

I have referred to "A Talk on Teaching" by a professor of chemistry.[7] It is full of valuable advice, directly applicable to our own teaching problems. Of somewhat broader scope is George Herbert Palmer's "Ideal Teacher." Palmer[9] has outlined in a fundamental, simple way his conception of the good teacher. What most concerns us, I think, is this: The prime, imperative condition to be fulfilled by the good teacher —in fact, by any one worthy to be called teacher—is that he love to teach. Here is a passage worth much quoting:

> Harvard College pays me for doing what I would gladly pay it for allowing me to do. No professional man, then, thinks of giving according to measure. Once engaged, he gives his best, gives his personal interest, himself. His heart is in his work, and for this no equivalent is possible; what is accepted is in the nature of a fee, gratuity, or consideration, which enables him who receives it to maintain a certain expected mode of life. The real payment is in the work itself, this and the chance to join with other members of the profession in guiding and enlarging the sphere of its activities.

I am convinced that, no matter how important methods and policies may be in our medical teaching, a rich source of our failure lies in the assumption of instruction by those who do not in their hearts love to teach. A man may be an atrocious lecturer; he may be slow, awkward, outwardly uninteresting. If he loves his subject well enough to know it, and in addition loves to impart it, somehow he can kindle the student and get work out of him when the more facile man fails.

EXTERNALS AND INTERNALS

Just as the externals of manner and method count but little beside the spirit and motive within the man, so do the externals of housing, equipment and appropriation fall more than into second place when we consider the man and his subject. Some one asked an eminent teacher what he would regard as requisite in order to establish in a certain institution a department of psychology. His reply was to the effect that, first, a *psychologist* was necessary, and then, if one wished, there might be provided some bits of colored paper—though the latter were comparatively unessential. "We put our trust too much in systems and not enough in persons," says our authority on botanical teaching, William Francis Ganong.[10]

> And for this there are many evidences. For one thing we rely too much on a supposed virtue in buildings and equipment, though in this we but share the spirit of our machinery-mad day and generation. It is much easier for us Americans to obtain great laboratories and fine equipment than to make good use of them afterward, and nowhere among us do I see any signs of a Spartan pride in attaining great results with a meager equipment. Moreover, we make a deficiency of equipment an excuse for doing nothing. As one of the most brilliant of American botanists once said, some persons think they can do nothing in the laboratory unless provided with an array of staining fluids which would make the rainbow blush for its poverty.

Given teachers who love their subject and take joy in teaching it, who know their subject so that they can give lavishly, who can so interpret the mind of the student that the subject may incorporate itself effectively in relation to other subjects, and who insist on learning by doing, and doing well—and what matters it if the rooms be dingy and the bottles cracked?

For the student, too, externals count for little. Says David Starr Jordan:[11]

> The man, the teacher and the contact with Nature—these are the only realities . . . The university cannot make the man . . . its principal influence is found in the degree to which it grants the inspiration of personality.

The student entering his professional course should remember this: "The university cannot make the man." It can put nothing into him that is not already there in some form. It is for him to see that what *is* there receives exercise and development. It is he who does the work. If he has in him a living desire to make the most of his opportunities, a liberal education in the best sense awaits him. "Any study is liberal," in the words of Tufts,[12] "if pursued in a scientific manner and given significance for human life. Such studies call out a widening self. In such studies the mind comes to its own. In such it gains power." "Medicine," he adds, "is perhaps the farthest advanced of the professions in this respect." This judgment, coming from a non-medical educator, is for us significant.

AIMS FOR THE STUDENT

The student must not be content to follow solely the path marked out for him in his course. He must enrich his mind, while it is yet plastic, with general reading that is good, if ever so little. No one needs broad interests more than does the physician. He may have to fight hard to get these things, but they are worth the fighting. "Without idealism of purpose," said Christian A. Herter,[13] "without the willingness to make sacrifices of material comfort and much that the world overprizes, the career of the student and practitioner of medicine is almost certain to be pitifully limited and mediocre."

8. Lee, F. S.: Science, 1912, xxxvi, 375.
9. Palmer, G. H.: The Ideal Teacher, Atlantic Monthly, 1907, xcix, 433.
10. Ganong, W. F.: Some Reflections on Botanical Teaching in America, Science, 1910, xxxi, 321.
11. Jordan, David Starr: The Making of a Darwin, Science, 1910, xxxii, 929.
12. Tufts: American College Education and Life, Science, 1909, xxix, 407.
13. Herter, C. A.: Imagination and Idealism in the Medical Sciences, The Journal A. M. A., Feb. 5, 1910, p. 423.

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The possession of keen, responsive senses is a priceless asset to the physician, and this will depend not only on his general bodily health, but also on such foresight and sacrifice as are necessary to maintain a life of self-control. "The careful preservation of the senses in the freshness of their perfection," wrote Philip Gilbert Hamerton,[14] is altogether incompatible with every species of excess."

If you are to see clearly all your life, you must not sacrifice eyesight by overstraining it; and the same law of moderation is the condition of preserving every other faculty. I want you to know the exquisite taste of common dry bread; to enjoy the perfume of a larch wood at a distance; to feel delight when a sea-wave dashes over you. I want your eye to be so sensitive that it shall discern the faintest tones of a gray cloud, and yet so strong that it shall bear to gaze on a white one in the dazzling glory of sunshine. I would have your hearing sharp enough to detect the music of the spheres, if it were but audible, and yet your nervous system robust enough to endure the shock of the guns on an ironclad. To have and keep these powers we need a firmness of self-government that is rare.

Two qualities I would urge the student to cultivate in relation to his work. They are patience and loyalty. Often he will feel disposed to grumble because he cannot see why such and such a subject is dragged into a medical course, or why he need learn the details of a yet unsettled problem in science. Let him have patience, remembering that subjects possessing apparently a very indirect bearing on practical medicine have been and always may be of deepest significance. The judicial mind is one of the highest possessions of the physician; and loyalty, of the friend and gentleman.

WORK OF THE PHYSICIAN

It is an oft-repeated truism that the doctor should be what his name implies. Yet it cannot be too earnestly reiterated. Few men are called on to teach more things than is the doctor. His influence over the community is enormous. He must train himself to render service wherever possible in teaching people to live sanely.

He must also teach them to *think* sanely. The public mind is wofully ignorant of what medical science is, and of what it has done and can do for humanity. Swayed hither and thither by charlatans, agitators and an undiscriminating press, the public instinctively seeks the doctor as the one fitted to expound the sober truth and point out where authority really lies. He cannot begin too soon to practice the weighing of scientific evidence, in order that he may spread the new gospel in medicine—that demonstrated facts, not philosophies and schools of opinion, are now in medicine, as they have long been in the natural sciences, the sole basis of practical application. Through such endeavor alone, which I hold to be the very highest that can claim the attention of the physician, can come that movement for public sanity characterized by President Eliot[15] as a "new Declaration of Independence," which, he says, "would exhort the people to spend more money on public education, so that the new generations may become quick to detect error, to accept facts and to discriminate between the plausible and the sound, the probable and the improbable, the credible and the incredible, the guesses of a roving imagination and the results of actual experiment." Lee[16] has called the physician who is also a good citizen "a missionary of common sense."

THE MAN OF SCIENCE

What an overworked, distorted expression "scientific" is in every-day life! It has received such advertisement for commercial and sensational ends that we cannot speak of science without suggesting a sort of wizardry, through which astonishing discoveries occasionally emerge from absent-minded, cold-blooded, impractical gentlemen in laboratories, whose time is mainly spent in satisfying a prying curiosity. From the time of Galileo to this day it has been the lot of science to be misinterpreted and misunderstood. It does not take the medical student long to begin to see how utterly medicine draws its sustenance from abstract science; and who shall bring the public into helpful, sympathetic relation with the scientific investigator but the physician, who owes his hourly skill to the truth-seeking labors of Harvey, Bernard, Helmholtz and Pasteur? The work of science is simply *an attempt to arrive at truth through honest observation and straight thinking.* And it is the duty and privilege of the physician to proclaim it as such; for, in the noble words of Huxley's autobiography,[17] "there is no alleviation for the sufferings of mankind except veracity of thought and action."

Beyond and above every triumph of applied science that brings a boon to humanity there hovers a great cloud of witnesses—names known and illustrious, names unknown or forgotten in the theoretical, "impractical" realms of learning—to whose labors the final inventor or discoverer has added his final straw of genius. We must teach the people to reverence such names as they are reverenced, for example, in France and Germany. When the French people voted to see who was considered their greatest man, it was not Napoleon who was chosen, but Pasteur, whose unspeakable service had won their love and gratitude. To this end every medical man should be a reader of scientific biography. The final triumph of truth attained is dramatic and inspiring; the path of action marked out thereby, clear and satisfying. Thus in the midst of his baffling problems the physician can take heart, and likewise help others to take heart, in the thought that life-giving knowledge is replacing, little by little, the ignorance of the ages.

57 Tillinghast Place.

14. Hamerton, P. G.: The Intellectual Life, Letter 7.
15. Eliot, Charles W.: Faneuil Hall Address, July 4, 1911.
16. Lee, F. S.: A Defence of Sanity, Science, 1909, xxx, 823
17. Huxley: Method and Results, Essays.

Duration of Infectiousness of Secretions in Epidemic Poliomyelitis.—Kling, Wernstedt and Pettersson state that in a series of nine cases of typical infantile paralysis the secretions from the mouth and intestines were obtained by lavage, and monkeys were inoculated with them after various intervals. In their communication on the subject in the *Zeitschrift für Immunitätsforschung*, 1913, xvi, 17, tables are given showing the results obtained at periods varying from one week up to seven months. Almost all the monkeys inoculated in the first few weeks died; only one died after a lapse of seven months. In only one case were the secretions harmless as early as by the end of the first month. However there was a steady decrease in the degree of virulence manifested. Inflammatory exudate in the spinal cord was found only in cases inoculated during the first two or three weeks. After that the chief change was degeneration of the nerve cells, showing diminished virulence of the toxin. It would manifestly be impossible to isolate patients for the several months during which the secretions are infectious, but if they are isolated during the first few weeks of greatest virulence the disease will appear only in the milder or abortive forms.

THE CLINICAL AND PATHOLOGIC RELATIONSHIPS OF HYPERPLASTIC AND NON-HYPERPLASTIC GOITER *

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The study of the clinical and pathologic relationships of the various types of goiter has of necessity been followed with the greatest interest in the surgical clinics. In a short paper it is impossible to review the various contributions to the subject. The following points, however, may be selected from the work done in these clinics: the clinical classification of the cases of goiter into simple or exophthalmic or equivalent terms, and the pathologic classification of the thyroids removed at operation into those with and those without sufficient hyperplastic or hypertrophic changes to characterize the gland; the recognition of toxic-goiter heart in a certain percentage of cases that are not diagnosed exophthalmic goiter and a less generally well-defined idea that the cardiac damage is only one of the manifestations of a general toxicosis; the finding of hyperplastic changes in from 70 to 90 per cent. of the thyroids removed for exophthalmic goiter, and the occasional presence of hyperplasia in glands removed from patients not having a history of notable toxic symptoms. Wilson, in 1908, after reviewing the available pathologic material from the cases which had been diagnosed as exophthalmic goiter, and in which operation had been done at St. Mary's Hospital, pointed out that 80 per cent. of the glands showed hyperplastic changes, and that, in general, the length and severity of the case history could be determined from the pathologic findings.

The relative constancy of notable hyperplasia in the thyroids of fully developed exophthalmic goiter, contrasted with the occasional failure to find this pathologic condition in glands removed from patients having an apparently similar clinical picture of this disease, and the rare finding of diffuse hyperplasia without accompanying evidence of thyrotoxicosis has led to much discussion and conflicting opinion regarding the specificity of this change.

In the latter part of 1908 a review of the clinical histories and the pathologic reports of our entire series listed as simple and exophthalmic goiters led me to the following conclusions: 1. We have at least two distinct, but very similar, types of thyroid intoxication, one associated with non-hyperplastic goiter, the other associated with hyperplastic or hypertrophic thyroids. 2. All cases having thyrotoxic symptoms with notable hyperplastic thyroids should be diagnosed exophthalmic goiter and that cases having thyrotoxic symptoms without notable hyperplastic thyroids should be classified with the cases of toxic-goiter heart, at least until we have still further evidence on which to subdivide these groups.

The main objection to these conclusions was the inability to make the clinical and pathologic diagnoses agree in about 10 per cent. of the cases. The lack of constancy in the clinical and pathologic relationship in mild and atypical cases could be easily explained. Our series, however, included (and I think this was true in other clinics) a number of cases of apparently typical exophthalmic goiter with exophthalmos and a pathologic report of adenoma, colloid goiter, adenomatosis, etc., without hyperplasia. A careful study of these cases demonstrated errors either in noting the presence of exophthalmos or from incomplete pathologic examination in the majority of instances and a probability of errors in the remaining portion.

This led to the use, in writing the histories of the 3,207 cases that have come to operation since Jan. 1, 1909, of forms covering in great detail the points which might later prove of use in studying the development and course of thyrotoxicosis and its relation to the pathologic changes in the thyroid. Figures and signs having, so far as possible, fixed values have been used in place of descriptive adjectives. Observations of fact and opinion have been carefully distinguished. The clinical and pathologic findings have been placed in parallel columns without any comparison of notes on the part of the clinicians and the pathologists. Clinical records for statistical purposes have not been changed after the patient came to operation. This has made possible the compilation of statistics by clerks who are not in any way warped by preconceived ideas or a knowledge of factors other than those under immediate consideration.

Correlating the statistical data, we may safely come to the conclusion that exophthalmic goiter is a definite clinical complex always associated with hyperplasia of the thyroid, and that it should be sharply distinguished from the constitutional state or states that may develop with non-hyperplastic goiter. As a complete review of this material is beyond the scope of a short paper and the patience of the average reader, I have attempted to answer the questions brought up with the least possible amount of statistical data, using only the following factors: the age at which the goiter is first noticed by the patient; the age at which thyrotoxic symptoms developed; the presence or absence of exophthalmos, and the presence or absence of notable hyperplasia in the thyroid. It is my purpose to take up these questions with a full report in a series of papers.

The term "thyrotoxicosis" is here applied to the constitutional state associated with goiter. As a matter of convenience for quickly presenting the association of the clinical and pathologic findings, the constitutional symptoms accompanying goiter have been attributed to a toxemia the result of a disturbed thyroid function. As a temporary expedient the cases have been classified pathologically as hyperplastic and non-hyperplastic, and clinically as hyperplastic-toxic, hyperplastic-atoxic, non-hyperplastic-toxic and non-hyperplastic-atoxic. The glands showing marked hypertrophy have been included with the hyperplastic goiters. Following this classification for the 2,917 new cases coming to operation between Jan. 1, 1909 and Jan. 1, 1913, 42.8 per cent. are hyperplastic and 57.2 per cent. are non-hyperplastic. Of the hyperplastics 99.2 per cent. are toxic and 0.8 per cent. are atoxic. Of the non-hyperplastics 23.3 per cent. are toxic and 76.7 per cent. are atoxic.

While the association of the constitutional symptoms with non-hyperplastic goiter involves to a certain extent a personal equation, this is to a very limited degree true for the cases having hyperplastic thyroids. The estimation that 23. 3 per cent. of the non-hyperplastic goiters are toxic is made on a very conservative basis.

Patients coming under observation with non-hyperplastic-toxic goiter give a history of having first noted the goiter at the average age of 22 years, and the evidence of intoxication at the average age of 36.5 years. The corresponding ages for hyperplastic goiter are, respectively, 32 and 32.9 years.

That non-hyperplastic goiter is noted ten years earlier in life than hyperplastic goiter, that fourteen and one-half years elapse between the appearance of non-hyper-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

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plastic goiter and the development of notable toxic symptoms, and that the constitutional symptoms were noted but a few months (between ten and eleven) later than the goiter in the patients affected with hyperplastic thyroid is alone sufficient to show that we are dealing with at least two distinct pathologic and clinical groups. That one is not the sequence of the other is self-evident.

Are all hyperplastic goiters coming to operation toxic? Throughout our series the number of cases in which the clinician failed definitely to note and attribute constitutional symptoms to the thyroid and which were later diagnosed hyperplastic goiter by the pathologists vary from two cases in 1909 to four cases in 1912. Two of these latter four cases were in children under 4 years of age and can be excluded in considering the hyperplasia of adults. The third case was that of a girl 15 years of age who gave a history of having noticed the goiter, periods of tremor, tachycardia and palpitation for nine months. These symptoms, however, were not attributed to the thyroid previous to operation. The fourth case was that of a woman 47 years of age who gave a history of having noticed the goiter for twelve years, rapid growth during the few months previous to coming to operation and a long train of symptoms, part of which might be attributed to thyroid intoxication. I have excluded a few cases that had small areas of hyperplasia in the thyroid because they are still under discussion by the pathologists. The majority of them had moderate toxic symptoms indicating that the activity of the thyroid is proportionate to the degree of the hyperplasia.

Is hyperplasia of the thyroid more prevalent in the first two decades of life than we have definite knowledge of, perhaps indicating a thyroid activity in response to some demand that cannot be considered far from normal? If so, is this hyperplasia of the thyroid to be sharply distinguished from the hyperplasia associated with exophthalmic goiter which develops at the average age of 32? I do not think that we can definitely answer these questions at present, though there is much evidence suggesting an affirmative answer, at least to the clinical side of the question.

Is the exophthalmos of thyrotoxicosis always associated with hyperplastic goiter? The pathologic reports fail to show the presence of hyperplasia in the cases in which exophthalmos was noted by the clinician, six times in 1909, four times in 1910, twice in 1911, and not in a single instance in 1912. Nine hundred and eleven new cases of goiter came to operation in 1912. In most of the exceptions to the rule previous to 1912, we have been able definitely to prove that there was an error in noting the presence of exophthalmos.

Should all toxic-hyperplastic goiters be included under the term "exophthalmic goiter"? Possibly there is a small group of cases which should not. That there is very little chance for error, however, in answering this question in the affirmative if we include only those cases coming to operation is indicated by the following facts: (1) Of the cases having diffuse hyperplasia of the thyroid coming to observation from one to three, three to six, six to nine, nine to twelve, twelve to eighteen, eighteen to twenty-four months, and over two years from the onset of toxic symptoms 50, 59, 67, 75, 80, 80, and 87 per cent., respectively, had exophthalmos (questionable cases excluded); (2) if we select from any period in our series twenty-five consecutive patients having hyperplastic thyroids and very mild toxic symptoms, over 50 per cent. had exophthalmos and if we select from the total number of patients coming to operation during 1911 and 1912 the twenty-five patients with non-hyperplastic thyroids having the most intense intoxication, exophthalmos is not noted in a single instance. It is quite possible that exophthalmos may be associated with non-hyperplastic-toxic goiter, but, if so, it is so rare that it must be in a way considered accidental.

Is the symptom-complex accompanying hyperplastic goiter to be directly attributed to disturbed thyroid function? While I have so considered it in this paper only as a matter of convenience for pointing out the association of the clinical and pathologic findings, and do not wish to get into a discussion of this subject at present, I do wish to call attention to a point in support of this theory that, so far as I know, has not hitherto been made, namely, that a person 22 years of age with an adenoma of the thyroid has a definite chance of developing a train of symptoms during the thirty-sixth year so similar to the symptom-complex associated with hyperplastic thyroid that the best-trained diagnosticians are constantly confusing the two conditions.

Can we associate the symptom-complex of non-hyperplastic-toxic goiter with any definite pathologic change in the thyroid? For the present I shall have to answer this question in the negative.

Correlating the statistical data herein given, we may safely come to the conclusion that exophthalmic goiter is a definite clinical complex always associated with hyperplasia of the thyroid and that it should be sharply distinguished from the constitutional state or states that may develop with non-hyperplastic goiter.

RECIPROCAL RELATIONS OF THE CLINIC AND THE LABORATORY IN MEDICINE*

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The clinic has been under obligations to the laboratory since the time of the first post-mortem descriptions of normal organs, and of pathologic changes in organs and tissues. Yet to-day one would pass over the founding of modern medicine by Rokitansky, Cohnheim and Virchow on pathologic and histologic anatomy, to the consideration of the more striking relations of the clinic to bacteriology, parasitology, physiology, physiologic chemistry, experimental therapy and laboratory diagnosis. It is not that pathologic changes in tissues are unimportant, but in the newer fields of research there has been so rapid a development of methods applicable clinically to the accurate diagnosis and to specific therapy and prophylaxis of infective and parasitic diseases, and the correction and regulation of toxic and antitoxic metabolic disorders of a non-invasive nature, that the earlier pathologic investigations must be considered of a former era.

The laboratory has forgotten that the original stimulus for its efforts came from careful observers of clinical conditions. Without this it is doubtful whether the laboratory worker would have shown the patience of his clinical contemporaries, and it is likely that he would have taken himself in despair to other fields.

As a matter of fact, within a few years the clinic has swung far afield from the onward course of scientific medicine in the attempt to avoid the overwhelming strides of experiment and of laboratory application and

* Read by title, before the American Climatological Association, Washington, D. C., May 8, 1913.

from the practice of the results of experiment and observation which are beyond the ken of the unaided eye and hand. It is interesting to note that the first scientific aid to the clinician was through the methods of Auenbruegger, Corvisart and Laennec, assisting the ear.

No one would decry the value of anamnesis, physical diagnosis and experiential and statistical knowledge, any more than deny the complementary relation of the laboratory to such methods; but in certain instances, if not in many, as in diphtheria and epidemic diplococcus meningitis, statistical knowledge has made it evident that the laboratory has displaced the clinic in importance in the complementary relation. This is the fact which most clinicians, the rank and file of practitioners, deny—that there are diseases in which laboratory knowledge counts for everything, and that experience of thirty years develops less proficiency along certain lines than the modern first-grade medical school imparts to its latest graduates.

INDEBTEDNESS OF THE MODERN MEDICAL CLINIC TO THE MEDICAL SCIENCES

To the fundamental sciences of physics and chemistry, medicine is indebted more indirectly than directly, except in the case of physiologic chemistry, which has developed as a branch of chemistry essentially medical in application.

The chemical methods directly employed are of a simple nature and yet the chemical investigations which have enabled an understanding of normal and diseased processes have involved elaborate procedures on the part of highly trained experts. This lack of applicability of advanced complicated methods is due to the fact that chemistry, *per se*, has to do in part with inorganic substances which have so far as known little to do with processes of disease and healing. The chemistry of organic substances which play a considerable part in normal functions and pathologic states has been specialized in as physiologic chemistry.

Apart from the manufacture of anilin dyes, nonphysiologic chemistry has more to do with the synthetic processes for the preparation of drugs than with the workings of a clinic.

From physics many methods have been selected. The stethoscope, the sphygmograph and sphygmomanometer, the various forms of cardiograph, instruments for hemometry, the spectroscope, the polariscope, the calorimeter, the Roentgen rays and radium emanations, to say nothing of the numerous principles of physics applied to instruments for the diagnosis and treatment of diseases of special parts and for mechanotherapeutics and electrotherapeutics, are well known. The most widely used are the stethoscope, the sphygmograph, the Roentgen rays, the hemometric apparatus and the polariscope. There was a day not long since when apparatus for electrotherapeutics was more widely used than far saner methods of therapy, but fortunately this day is passing.

The application of certain principles of physics and the use of physical apparatus play a large part in modern chemical laboratory technic, but are subordinate as a rule to methods of physiologic chemistry, biology, pathology and bacteriology. While for a time such methods were absorbed by the clinic, at present along certain lines, as in roentgenography, the clinic must employ an expert technician and an interpreter of roentgenograms. The progressive clinic must employ an assistant especially trained in this particular branch of physics.

To physiology, as to anatomy and general pathology, medicine in every branch owes not only its allegiance, but also its existence, for without these three fundamental sciences inefficient empiricism would have prevailed, and no modern medicine would exist. It is true to-day that, with the exception of the application of the sphygmograph and the cardiograph and the simpler tests in neurology, the methods of physiology are less applicable to the clinic than to experimental investigation. The highly developed apparatus for such methods must be used by one of special training in physiology.

From physiologic chemistry many methods, both simple and complicated, have been drawn, on account of their applicability, as essential to the clinic for the daily routine for diagnosis. Some of the methods, as the testing of urine for albumin, sugar, indican, bile and blood, are available for any well-trained, proper-spirited physician, and for the fledgling hospital interns who through their laboratory training mainly have proved a worthy asset to the clinic. Many of the methods, however, are too complicated and too time-exacting for utilization without the assistance of properly trained graduates in medicine who have a liking for thorough study and investigation of cases.

This is no reason for not developing the facilities for conducting such work in connection with the clinic, and is an excellent reason for attaching to a medical clinic a trained laboratory assistant. In a well-conducted clinic, for example, the estimation of urea should be made in conjunction with the estimation of the total nitrogen and ammonia and other nitrogen-containing substances in the urine. The estimation rather than the determination of the presence of acetone bodies in the urine should be made by one qualified to do such work. For more advanced examinations for the investigation of problems in physiologic chemistry in relation to medicine the physiologic chemist must be not only consulted but also persuaded to become interested.

In experimental physiology, the elucidation of the nature and the treatment of certain thyroid diseases, and the understanding of circulatory and cardiac disease, stand out prominently among the achievements of modern medicine, as the results of infinite labor and patience of master minds persevering in the face of difficulties and discouragements.

The keen observations of certain contemporaries are comparable to those of Beaumont, Bernard, Gull and Addison. Since the prevalence of the diseases explained by these observations is relatively small compared to those investigated through pathology, bacteriology and allied sciences, it is from the latter that the most beneficent results have come. To pathology and experimental pathology one must credit the understanding of the nature and progress of disease and therefore the significance of a diagnosis and the rational employment of therapeutic measures directed particularly against the alleviation of symptoms, and the eradication of causative agents. Under the influence of pathology have developed bacteriology and parasitology, which have elucidated the etiology of so many diseases, the nature of which pathology had previously determined.

As important as the discovery of the etiologic agents of infection and parasitic diseases, has been the evolution of epidemiology, resulting in the elaboration of the methods for controlling epidemics of yellow fever, malaria, ankylostomiasis, trypanosomiasis, plague and the gradual reduction of the prevalence of typhoid fever. The discovery of "carriers" and the existence of such individuals dangerous to a community, while not well recognized by the practitioner and even doubted by some, should be impressed on medical students as realities to

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be sought for under certain conditions and properly cared for. Recently attempts have been made in a few instances to determine the number of "carriers" among convalescent typhoid patients in hospitals and so regulate their relations with surroundings that they will not become a menace to the community. From experimental pathology and experimental medicine have come the effective methods of treatment for rabies, diphtheria, tetanus, epidemic meningitis and the prophylaxis against variola. Whether from the clinician, the pathologist or the bacteriologist, such so-called brilliant discoveries have been the result of long painstaking, scientific investigation by minds of the same type, utilizing laboratory methods. The clinician may be a keen observer and may recognize remarkable shades of difference in the symptom-complex of diseases, but the one who explains the meaning and causation of the symptom-complex must be the scientific investigator, exemplified by the leaders in medical science. Most recent are the brilliant results of scientific investigation in experimental therapeutics, and one hopes to see studies in chemotherapy and in scientific investigation in materia medica place drug therapy on a sounder and more wholesome basis.

From the simpler methods of examination evolved through research in the medical sciences has developed the clinical laboratory employing methods available for clinical diagnosis, and necessitating the training of men in cytology and bacteriology and microscopy.

The fact that clinical laboratory assistants may learn readily the simpler chemical and physical methods for diagnosis but that it requires years of application to become familiar with and expert in clinical bacteriology, cytology and the microscopy of parasitic disease is not sufficiently recognized to-day.

THE INFLUENCE OF THE LABORATORY ON MODERN MEDICAL EDUCATION

Experimental investigation in physiology, physiologic chemistry, pathology, bacteriology and therapy have founded the conception, knowledge and treatment of disease on a firm scientific basis and have made necessary the use of laboratory methods for diagnosis and therapy. Without experiment there would be little of science and accuracy in the practice of medicine.

The most striking change in medical curriculums due to the modern conception of disease is the displacement of the didactic lecture and the theatrical clinic by demonstrative teaching and the clinical clerk or assistantship system in hospital wards and dispensary. The student no longer learns the symptoms of disease by memory, and therapeutics by rote, but is made to see, feel, investigate and think before drawing a conclusion. The consultant of thirty years ago lectured to his students and conducted a private clinical laboratory with one or two assistants, and followed with interest the necropsies in his cases, and to-day he teaches his students as assistants in hospital wards and dispensaries, and organizes clinical laboratories with capable assistants to whom he may send the students for a period sufficient to become familiar with the laboratory methods suitable for diagnosis. Students were thus formerly taught to diagnosticate through quizzing the patient and clinical observation, often superficial and perfunctory, since their minds were not stimulated to careful, minute observation by the habit of exactness, inculcated by familiarity with laboratory methods.

To-day a student is taught to diagnosticate through anamnesis, clinical observation, physical diagnosis, physiologic methods, methods detecting structural alteration and disturbance of function in organs primarily involved and in other organs and systems secondarily disturbed and through searching for etiologic factors producing a general disturbance before function is altered in an organ or before a system is attacked. Particularly important is the instruction given in prophylaxis and the prevention of the spread of infectious diseases. Experimental medicine and clinical laboratory methods have revolutionized diagnosis and to a great extent, though not so completely, therapy. The latter retains many of its deplorable features, not so much from faulty teaching as from the extended advertising and commercialism of drug-manufacturing firms, who by individual canvassing, as well as by advertisement and distribution of pamphlets, attract the attention of the young physician as he settles down in an office to await the growth of a practice.

Away from medical centers and university surroundings, the country practitioner should be more vulnerable to the advertised therapeutics than the city physician; but this does not always follow, since the tenor of present medical education leaves a habit of rejecting what is fundamentally wrong in practice. A deplorable attitude of the visiting physician and the practicing physician is that of indifference to necropsies, both in endeavoring to obtain them and in checking up the clinical observations when the post-mortem examination is conducted by competent pathologists. The figures given by Cabot for the coincidence of anatomic diagnosis at necropsy with clinical diagnosis should impress any one with the necessity for arousing interest in post-mortem examinations. Fifteen years ago the pathologists and a few progressive clinicians in this country had stirred some of the profession to activity, but of recent years, notably during the past five years, the clinician's interest in gross pathology has diminished alarmingly. The complacency with which most clinical diagnoses are made, the self-satisfaction with which the therapy is conducted on this diagnosis as a basis, are evidences of a faith unbounded, which should be replaced by careful and repeated observations to ascertain the facts before final judgment gives forth a diagnosis.

The figures quoted by Oertel, as those by Cabot, demonstrate how erroneous conclusions may be in medical practice even when based on the most painstaking clinical investigation assisted by careful laboratory tests.

This lack of interest in necropsies and this self-assurance in respect to clinical diagnoses have infested the hospital interns, excepting in a few institutions. It would be the better part of wisdom to insist that the hospital intern, if having through instinct and ambition no interest in necropsies, should be trained to appreciate their value, as the student is trained, and even made to perform, under the supervision of the pathologist, certain necropsies in cases from his wards.

The student in the best schools is trained to appreciate the knowledge gained through necropsies, but as a hospital intern, under the influence of experienced clinicians, his appreciation wanes and is often replaced by indifference to post-mortem examinations as to many other laboratory methods and other conceptions of disease taught previously by the laboratory departments.

Few clinicians are capable of performing necropsies, and it would not be desirable for them to undertake to perform them to any extent, for them the pathologist the most efficient reports are obtained; but the former, much to the satisfaction of the latter, might give evidence of a sincere interest in post-mortem reports.

The clinical clerk or assistantship system is a development *pari passu* with the laboratory and demonstration method of teaching. The lack of a sufficient budget as a rule limits clinical laboratory development in most teaching institutions, and the lack of realization of its importance limits it in hospitals, health resorts, and in private practice. Clinical laboratories will not be generally used until the present generation of laboratory-trained students replaces the passing generation of practitioners.

PRACTICAL DEVELOPMENT OF THE CLINICAL LABORATORY

For the Various Clinics of the Dispensary and Hospital.—Under the preceding paragraphs laboratory methods applicable to the clinic have been mentioned.

The best system of utilizing such methods is under dispute, judging from the organization of laboratory facilities in different medical schools and hospitals. Whether each clinical department shall develop within itself laboratory facilities which it needs or thinks it needs, according to its director, or whether a single clinical laboratory department to care for the needs, particularly along advanced lines, of the different clinics, shall be established, may depend on many factors. In the first-grade institutions for teaching and practice there is no doubt but that the latter method is preferable, as a system. The former method generally results in the assignment of the laboratory work to recently graduated assistants, who retain their positions, even as directors, for two or three years, so that the position is one of a rotating hospital intern or medical school assistant, which necessarily implies lack of familiarity with more advanced methods, and therefore lack of efficiency in teaching. And, strange to say, this system still prevails in medical schools which first introduced the laboratory assistantship to the medical clinic in this country. This is not so on the Continent. It is wise to relieve the student of much of the advanced routine and to concentrate his attention on some new or advanced method as an object of research.

Many advanced laboratory methods applicable to the diagnosis of conditions other than those of the medical clinic should be made available, through a central clinical laboratory, for other departments of the school and hospital. In some hospitals the interns are pathologic assistants during the first six months of service. The fault in this system is that after the sixth month the intern may do little or no laboratory work, if so inclined and not interested; and since laboratory examinations are made for him, as for his visiting physician, he forms the habit of having his work done for him, and later on in practice of neglecting to have it done. Six months' training is not sufficient to form the habit of doing such work as may be done by the practitioner.

In other hospitals, and the number is few, a clinical laboratory well conducted by the director of the pathologic laboratory or by a clinical pathologist is maintained, which results in the work being done on a high plane and in stimulating students and interns to interest themselves in laboratory study of cases throughout their service and thereafter in practice. This is by far the best system.

Again, in a few hospitals, the clinical laboratory work is conducted by young assistants attached to the medical and other clinics, and under their supervision by the interns; and while this method stimulates the interns and habituates them to the value of such work in practice, it maintains the laboratory service on a lower plane, since the recently graduated assistants, as directors of the laboratory and not under the supervision of a pathologist or clinical pathologist, do not reach the proper degree of efficiency in advanced methods during their short term of service.

The development of a clinical laboratory is, as a rule, considerably more advanced for medical than for surgical work and other clinics in hospitals. That this need not be so, and that a surgical clinic may benefit vastly by utilization of well-developed laboratory facilities, is evidenced by the superb organization at Rochester, Minn.

For Health Resorts of a Special and a General Nature.—Laboratories established at health resorts, in this country particularly, are for routine efficiency as part of a money-making venture, and, therefore, even when well conducted in their beginning by able men, become obsolete in methods and fall below the standard through lack of facilities for conducting thorough experimental studies, and the absence of the stimulating atmosphere of a university medical school or of experimental institutes.

The directors of health-resort laboratories might keep in touch with, and even be proficient in methods if they had the habit of visiting ocasionally university medical schools for courses of study; but as it is to-day, such visits are for a few fleeting days to clear up a theory, or obtain superficial acquaintance with some one procedure demanded by their clientele. There is no reason why such resorts should not take cognizance of the complications which afflict so many of their patrons, as well as of the disease with a name for which they ply their therapeutics, and occasionally search for the causative factors in diseases with which they become familiar clinically. Many instances will come to mind of worthy examples to follow.

For the Physician in Private Practice.—Within a few years there has developed in certain cities what may be termed a cooperative investigation association for diagnosis, the details of which may be obtained in Richmond, and in many smaller towns throughout the state of New York, and probably in many other states. Through a cordial cooperative system the laboratory knowledge of the recent recruits to the ranks of practitioners is made available to the mutual advantage of patients and the profession.

The influence of proper laboratory teaching is such that the student looks on disease from a different point of view from that of one who lacks such training. This point of view is that of always searching for the etiologic diagnosis, regardless of the name of the disease, and for the possibility of applying specific therapy, and results in the careful study of each case by all methods available. There is no question that the ultimate product, previously trained with such a point of view, is the more thorough diagnostician, and therefore one more capable of right practice, and this will be borne out by the next few generations of physicians who in practice will modify the present attitude of the average practitioner.

The length of time required for laboratory training is probably longer than for clinical training, to bring one to the same degree of proficiency in each, and it must not be forgotten that during the laboratory training the student and instructor are in close touch with the clinical aspect of each case. The specialist is such through his familiarity with the clinical and laboratory methods of diagnosis and therapy; and the new generations of family physicians will come into their own again on account of their ability to apply laboratory

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methods to practice, provided the medical schools live up to their possibilities.

ADVANCEMENT OF LABORATORY-TRAINED MEN TO CLINICAL POSITIONS

If one recalls the progress of clinical medicine during the past thirty years, one will appreciate that the most renowned and advanced clinics are those which have attached to themselves competent laboratory assistants and have been in close touch, amounting to cooperation, with the laboratories of the medical sciences or institutes of science allied to the medical sciences, and whose directors are men well trained in laboratories, as in Baltimore and Munich.

As feared by some there is danger in giving clinical positions to men who have done purely experimental work and little of it with one or two experimental successes, and to men long trained in one medical science. A man of such training with no clinical experience must of necessity submit to clinical training before efficiency for holding a clinical position is obtained, even as the clinician who has not previously had the requisite laboratory training, which is considerably more than there is time for in a medical school curriculum, is unfitted to direct a progressive medical clinic.

One cannot agree with many of the recent statements of Bevan.[1] Laboratory-trained men are not against the clinician, but would have the clinician made after a new pattern, thoroughly learned in laboratory methods through three or four years' experience while a clinical assistant, so that he may understand and interpret properly the utilization of physiologic, pathologic, bacteriologic and biochemical methods for diagnosis and for therapy.

Professors in medical sciences should be men who know considerably more of the subject they teach than the clinically trained men in medical schools ever hope to know on account of the little time the active clinical man can give to keeping apace with any medical science. The latter are not suitable for medical sciences, since the facts in detail, the truth entire, should be known by one, in order to teach the sciences, and it is impossible, with the tremendous development in the past twenty years, to be trained to teach in the medical sciences, unless one is a specialist, and often a specialist in one branch of a medical science.

172 East Seventy-First Street.

1. Bevan, Arthur Dean: Medical Education and the Hospital, THE JOURNAL A. M. A., March 29, 1913, p. 974.

Inspection of Water-Supply.—Let me for a moment note the fact that we have a most thorough inspection of the milk-supply, of our meat-supply, of food adulterations, but in how many communities in this country have we properly protected not only the inhabitants, but the stranger and traveler from infection by preventing the drinking of contaminated water from pumps and wells? You ask the average farmer or average person what he thinks about the water in the well on his premises and he will invariably tell you that the water is pure, clear and sparkling; and yet how many of these wells may not be contaminated with pathogenic germs? The inspection of many other things is no reason why a most thorough inspection should not be made of the wells, lakes, rivers and streams that all water supply not only in the cities but in the farming districts should be guarded. The state or county should order a most thorough control, and a periodical examination should be made and an official notice posted at all sources of water supply, stating the condition of the water, whether it is pure or otherwise, whether it is liable to bring about a disturbance of the gastro-intestinal tract or not.—Francis E. Froneczak, in *American Journal of Public Health.*

EPILEPSY AND PARESIS IN RAILWAY ENGINEERS AND FIREMEN*

CARL D. CAMP, M.D.
ANN ARBOR, MICH.

Although on several previous occasions medical men have called attention to the fact that epileptics and paretics are among those employed in connection with the running of trains and motor-cars and to the obvious dangers incident thereto, the subject has not apparently been given much consideration by the transportation companies, at least, so far as I have been able to ascertain by questioning the medical men they employ.

My attention was attracted to the subject through seeing three cases of epilepsy and two of paresis in the course of two years in men who were employed either as enginemen or firemen on locomotives.

While this is not a large proportion of the total number of cases of epilepsy and paresis seen by me, the points to be made are that these men were engaged in an occupation that made the disease a distinct menace to the safety of the traveling public as well as to their own, and that something could and should be done to prevent their employment in such occupations.

An abstract of the histories of these cases is as follows:

CASE 1.—A. T., a railway fireman, aged 28, came to the hospital Sept. 28, 1912, because of having "bad spells." There was no history of nervous or mental diseases in the family. The patient was single, denied venereal disease, and showed no history of trauma. He did not use alcoholics, but smoked a considerable amount of tobacco.

May 27, 1912, he had the first attack of which he had any knowledge. He lost the power of speech, had a "faint" feeling through his stomach, his arms trembled, and finally he lost consciousness. He did not have incontinence, but bit his tongue in the attack and felt weak after it. About three weeks later he had another attack, similar except that he did not bite his tongue. About two weeks later he had still another attack. The attacks were all ushered in by the same aura and none of them occurred on the engine while at work. A neurologic examination was practically negative. The urine, blood and blood-pressure findings were negative and a physical examination was negative. The Wassermann reaction on the blood was positive. An examination of the fundi oculi and of the nose and throat was negative.

During his stay in the hospital he had an attack in which he first became apparently speechless, pointed to one of his companions and mumbled and then fell out of his chair. He bit his tongue and made a few convulsive movements. He was unconscious altogether about five minutes. Following the attacks he could answer questions, but was dazed. He returned to his position because he said that he was about to be promoted to be an engineer and did not wish to lose his place.

CASE 2.—W. B., a railway fireman, aged 27, was admitted to the hospital July 8, 1911, complaining that at times he was irrational and had a headache. His family history was negative so far as could be learned from the patient. He had had only the ordinary diseases of childhood and denied venereal diseases.

The patient stated that the trouble came on in March, 1911, beginning with severe headaches which were accompanied by some visual disturbances. At times he had attacks of epileptic automatism; for instance, he arose at night and ran out of the house, running for almost a mile. At other times he had convulsive seizures. All the attacks occurred in the evening or at night. The neurologic and the physical examinations were negative. The examinations of the blood and urine and the Wassermann reaction were negative.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

The case was one of epileptiform attacks, possibly caused by beginning organic brain-disease. He did not intend to return to his work after leaving the hospital.

Case 3.—V. H. S., a railway fireman, aged 29, came to the hospital complaining of attacks of unconsciousness, April 9, 1911. The family history was negative and there was no history of epilepsy. He denied venereal diseases and used alcohol very moderately.

About nine years before his admission to the hospital he had a fall and, following the fall, a severe headache. About a month after this fall he suddenly became unconscious and remained unconscious for two weeks, after which he apparently recovered completely.

His trouble began eighteen months before his admission to the hospital with attacks of unconsciousness. In the first attack he was told that they tried to awaken him and could not. It came on while off duty, when he was asleep. The second attack occurred after a hard day's work. He went to sleep and when found was purple, with wide-open, staring eyes. On his admission to the hospital he was having attacks about every two months. They always came on while he was sleeping and he would soil the bed and occasionally bite his tongue. During the daytime he complained of attacks which he described as dizziness. He did not fall in these attacks, but they were actually attacks of momentary unconsciousness, in which he became slightly pale, had a staring expression and would not respond to questions. The neurologic and physical examinations of the patient were entirely negative.

The diagnosis was epilepsy of the grand mal and petit mal types.

Case 4.—B. K., an engineer, aged 56, came to the hospital June 10, 1911, complaining of nervousness and difficulty in vision with incontinence of urine. His family history was practically negative. The patient denied that he had ever had venereal diseases and said that he had never been ill before nor had he had any injury. He said that he was married and had eight children. He had been working at his occupation up to the time of coming to the hospital.

On examination he appeared very nervous and confused. There was a marked disorientation of time and space. He talked disconnectedly, and could give little or no information regarding his present illness, except that he had had more or less incontinence of urine for two years. He stated that he felt very well; "his only trouble was that his wife wanted him to take black pills and he wanted to take white." He obeyed commands but apparently did not fully comprehend what he was doing. There was a marked tremor of the hands when moving. His speech was typically paretic. His pupils were small, with no reaction to light, and the tendon reflexes of the lower extremities were not obtained.

The diagnosis was paresis, of at least two years' duration before his admission. His commitment to an asylum was advised.

Case 5.—P. B., railway engineer, aged 40, complained chiefly of numbness on the left side. His family history was negative. He had always been healthy. He did not use tobacco or alcohol and denied having had venereal disease.

His trouble began in February, 1909, when he had an attack in which he found that he could not use his left arm and could not talk. This attack lasted about ten hours, but he was not unconscious. In April, 1909, he had another attack, in which he did not lose his voice, however. The attack in this case was over in about fifteen minutes. From then until July he had similar attacks, sometimes as frequently as once a week, was never unconscious and never bit his tongue. In July he had an attack which affected the right side. On his admission to the hospital he had no special complaints but spent nearly all of his time in writing a very elaborate diary and many letters. He had an attack while in the hospital in which he lost his voice, he would not obey commands, and his arms and legs were rigid. He remained in this condition for about half an hour. He had no memory of occurrences during the attack.

The examination showed unequal pupils, with a sluggish reaction to light. The knee-jerks were exaggerated about equally on both sides, but otherwise the examination was negative. The examination of the spinal fluid gave a positive Wassermann reaction and showed an increased number of lymphocytes and an increased amount of albumin. He was overanxious while in the hospital to get back to work on the railroad; he said that the president of the road had written to him and that he wanted him back. He insisted that he felt as though he could work just as well as he ever could.

RAILWAY MEN WITH PARESIS AT STATE HOSPITAL, KALAMAZOO, MICH., FROM JULY, 1910, TO FEBRUARY, 1913

Name	Occupation	Age	Date of Onset	Date of Admission	Remarks
B. C.	Engineer	45	October, 1908	October, 1911	
H. R. S.	Car inspector	37	January, 1907	May, 1912	
S. T.	Fireman	40	February, 1911	January, 1912	Would forget signals and had to be told to shovel coal.
C. F. T.	Engineer	55	June, 1909	July, 1911	
J. L.	Flagman	65	February, 1911	March, 1911	Had allowed a train to run into a street-car 2 weeks before admission.
W. V.	Railroad work	50	November, 1906	December, 1911	
F. M. C.	Motorman	37	June, 1910	June, 1911	Discharged because of his queer talk.
S. G.	Engineer	31	June, 1911	October, 1911	
W. H. S.	Railroad clerk	52	December, 1905	December, 1910	In 1905 his car ran away from him and he was injured.
E. E. S.	Railroad clerk	53	.....	.....	Nothing of importance.
A. C. H.	Railroad brakeman	37	August, 1911	July, 1912	Nothing of importance in history.
C. L. B.	Engineer	40	November, 1910	October, 1911	Was discharged in October, 1911, after a wreck.
W. H. D.	Engineer	56	March, 1912	November, 1912	

I am not alone in my experience in this connection. In 1908, Dr. P. C. Knapp[1] called attention to general paralysis as a menace to public safety in transportation, and a committee of the American Neurological Association reported[2], in 1910, on the number of paretics in asylums who had been employed by transportation companies. The committee practically confined its attention to paresis and gave the statistics for a number of hospitals and asylums, mostly in New York and Massachusetts.

Statistics furnished me from the State Hospital at Kalamazoo, Mich., and given in the accompanying table, show that there were eighty-seven patients with paresis admitted from July, 1910, to February, 1913, and of this number thirteen had been employed by railways in positions connected with the operating department; five were engineers.

1. Knapp, P. C.: General Paralysis as a Menace to Public Safety in Transportation, Boston Med. and Surg. Jour., 1908, clviii, 187.

2. Tr. Am. Neurol. Assn., 1910, p. 238.

Whether or not the occupation has anything to do with the development of the disease I do not know. The constant nervous tension may have some influence in this respect, but the conclusion is certainly justified that there are men at work on railways in responsible operating positions who are epileptics or paretics.

If so much is true we may go on to consider what the result might be. In the report of an accident occurring in the past winter on one of the New York elevated lines, it is said:

> The accident, it has been charged, was due to the fact that the motorman in charge of the second train was not looking ahead, as he should have been doing. This, if true, affords an excellent illustration of the statement made by railroad officials that no matter how excellent may be the equipment of a train, or the mechanical and other devices installed for the purpose of safeguarding the line against accidents, unless the man directly on the job, be he engineer, motorman, conductor, flagman, signalman or brakeman, attends strictly to his duties and has his mind at all times on what he is doing, accidents are likely to happen.[3]

It may be objected that after an epileptic fit no man would be employed further in such a position and that the patient himself would wish to leave an occupation which his infirmity makes dangerous to himself and others. In respect to these points it can be said that frequently these patients do not know that they have epilepsy. They have attacks supposedly due to heat-stroke, indigestion, etc., or the attacks may be of the petit mal type with no consciousness of their existence on the part of the patient and no signs apparent to the casual observer. My own experience has convinced me that even when the patient does know the nature of his trouble, economic necessity may persuade him to take the chance and continue at his work.

In the case of paresis the patient usually has no true insight into his condition. He may complain of some of the symptoms—memory impairment, attacks, etc.—but he usually insists that he is quite capable in his work. The dangers in case an epileptic or a paretic is at the throttle of an engine, or in other situations that require an interpretation of signals and orders and constant vigilance, are too apparent to require extended comment. A certain number of accidents have surely been so caused; whether some of the serious accidents which were apparently caused by a deliberate disregard of signals or orders have been due to the same factor seems not at all unlikely.

There would be but little object in calling attention to this state of affairs if there were no way in which it might be remedied; but this, I feel sure, is not the case. I am reliably informed that all applicants for positions of this character are medically examined before they are accepted, and that for some of these positions repeated examinations of the vision are made. Different railways have somewhat different ways of carrying out these examinations, but no matter how these examinations are made the following points could be provided for:

Since we know that cases of epilepsy and paresis do exist among those to whom the running of trains is entrusted, and since the presence of these patients in an occupation of this kind is dangerous to them, to the railway companies and to the traveling public, it would be to the benefit of all concerned if the medical examinations included careful and frequently repeated inquiries into the presence of symptoms indicating the existence of these affections and, more important still, the use of objective tests, such as those of the pupillary reflexes, best calculated to demonstrate their presence and not requiring too much time in their performance. The selection of the tests to be employed and the value to be placed on each might be determined by an expert appointed by the company, who might then instruct the company's regular examiners either by printed instructions or by lectures, or better still by demonstrations in the use of these tests. A series of such tests might be given in a short time, and many of them simply noted in the course of other routine examinations. While such simple tests might not be absolutely diagnostic, they would have some advantages over the present method of diagnosis, that is, waiting for something to happen. If the suspicions of the company's regular examiner were aroused by his inquiries he could refer the man to a consultant who could make more extensive examinations.

924 Baldwin Avenue.

3 New York Sun, Sunday, March 10, 1913

ABSTRACT OF DISCUSSION

DR. C. EUGENE RIGGS, St. Paul: Some years ago I read a paper before the Mississippi Valley Medical Association on the subject of epilepsy as a menace, and I called attention at that time to the facts set forth by Dr. Camp. I also made reference to paresis, and recommended that, instead of having examination of engineers made simply by a physician or surgeon, there should be a competent neurologist to pass on all these employees whose condition is so vital to the welfare and work of a great railway system. My paper was called forth by a serious accident that happened in the East, evidently the result of a minor epilepsy on the part of the engineer.

DR. C. B. WOODSON, St. Joseph, Mo.: I have seen a number of paretics who were engineers and firemen on railroads. Some years ago a man who denied syphilitic history was running a passenger train on one of the most popular roads in our state, when he became violent and was overpowered by his fireman, who stopped the train. This man died a paretic in the state hospital. Another case that impressed me forcibly was that of a conductor on a freight train. He was brought to me by his family physician and I diagnosed the case as paresis, not, however, in an advanced form. The patient finally consented to go to a sanatorium, and he was observed sufficiently long to convince the family that he had paresis. While he was running on the train he had a fight or two with his brakeman, but the latter had superior strength and overpowered him. In reading of various accidents on railroads and of the persons responsible for them, it has occurred to me that possibly the greatest menace is the train-dispatcher. Recently there came under my observation a chief train dispatcher of an important system of railroad in the West, and I found that he had the jacksonian type of epilepsy. A serious wreck recently occurred near the capital of the state, and the train-dispatcher, who had been regarded as a very competent man, says that he was not well at the time.

There is absolutely no reason why advanced paresis should not be recognized by any one who hears the patient talk or observes him closely, even excluding the Wassermann, but if the Wassermann is brought to our aid designing physicians and patients can not take issue with it. It would be cheaper and far better if the railway companies would give a little attention to this condition in their men. It would be an easy matter to have them placed in an institution for the purpose of observation.

I believe that if a body like this Section would set forth to the managers of railways the dangers incident to conditions of this kind not only as a menace to life, but also as needlessly subjecting them to suits for damages, they would look into the matter further, and some satisfactory method of examination of employees would be arranged for.

DR. D. S. BOOTH, St. Louis: This to me is an important subject, as I have been connected with railways ever since

I have been in practice. I do not think that it is the custom of railway companies to employ knowingly any man who has either of these diseases; but the difficulty is to discover them. Murder and robbery are not permitted by law, but both are still going on. The only method we have of discovering these patients is when they come under observation. When the applicant seeks to enter service the examiner is not going to observe this condition, and the man will not tell him about it. Even after obtaining a history of venereal disease my greatest difficulty is to differentiate the diagnosis of these cases in order to prevent the men from going to work. Coming under the observation of the company's doctors is, I might say, tantamount to discharge. The men know these things and go to other doctors for treatment, and we see nothing of them until something happens perhaps that we have never seen in our service. I do not think that I have even known of an accident occurring as a result of these diseases. Recently a case has come under my observation which several years ago I diagnosed as epilepsy, but from the fact that it was the nocturnal form, and, further, that the patient was supported by outside influence, medical evidence perhaps and probably a brotherhood, and that he was on a switch-engine, he was permitted to retain his position. A few weeks ago he had an attack on his engine. If we do not have the support of the profession we certainly cannot prevent these things, and I, for my part, should be delighted to have any one give me an insight into how to detect these cases early, before the patients show any symptoms or serious accidents occur.

Dr. L. Harrison Mettler, Chicago: I do not think that there is any question but that it is expedient for railway companies to recognize as early as possible a case of disease on account of which life is exposed to danger. A friend told me that his father, an engineer on a run of only a few miles, but on a fast train, had figured out the number of things an engineer had to carry on his mind during that time, in order to be ready to meet emergencies. I expected him to say a large number, but was amazed when he told me that there were seven hundred different things to be borne in mind. The results of his investigation were published, I think in *Harper's Magazine*. He remarked that people seldom realize that when an engineer starts out on his run he must at once put his mind on parts of the engine, signals, orders, etc., and that in that short space of time this particular engineer had to carry absolutely in his mind and be prepared to meet about seven hundred emergencies. I raise this point simply to suggest that I have often wondered whether or not the strain has something to do with these conditions, in addition, of course, to actual disease, in some of these cases. Of course, diseased men, we know, ought not to be on an engine. But the strain has a tremendous import in these cases, and there is no question but that a long rest will help even non-diseased engineers.

Dr. W. Brown Ewing, Salt Lake: My experience with railway work has been that examinations are perfunctionary. The companies have a long list of questions regarding mumps, measles, vaccination, etc.; the applicant says yes or no; as he perhaps happens to have his legs crossed, one leg is tested; urinalysis is made—and that is about all there is to it. This condition has been largely forced on the companies by the men themselves. Some surgeons of railways are not allowed to strip a patient. They may turn down his shirt in front and examine his lungs with a stethoscope and his heart in the same way. A neurologic examination is never heard of so far as my experience goes. The patients whom I have had on the Denver and Rio Grande Railroad have worked for years without any suspicion of epilepsy, paresis, or any similar disease, until within a short time before they were referred to the neurologist. Another unfortunate feature is that a true epileptic is not always removed, be he telegraph operator, engineman, conductor or brakeman who acts also as a switchman, and it is not always possible to have these men removed. The labor unions have reached the point now at which they contribute 10 per cent. of the hospital fund and have 90 per cent. of the say as to what shall be done with it. That one feature will, it seems to me, force the companies to do away with collections from the employees entirely, and then treat only cases of injury or sickness in the line of duty.

Dr. Sanger Brown, Chicago: It seems to me that it is going to be a difficult matter for us to suggest anything that would be of particular value in carrying out the purposes which Dr. Camp evidently has in view, that is, the protection of the public. I do not believe that we can do anything of any particular use, as physicians, so far as epilepsy is concerned, because we know very well that there is no extended examination made between the seizures to enable us to say with any degree of positiveness that the patient is subject to epilepsy, unless the case has advanced so far that the surgeon can easily detect it. In many cases, however, we can determine with a great deal of certainty whether or not the patient has tabes or paresis.

This matter would not be materially helped by a rigid examination at the time the patient applied for employment. Usually he is a young man then and he would not have the symptoms of either tabes or paresis; after all, the main danger arises from the disease affecting those men who have been in the employ of the company for a number of years and who hold responsible positions. The serious disasters that have occurred have come about in this way: Some trusted employee was attacked with some of the episodes of these two diseases, giving rise to a disaster. We have all examined cases of aged men who occasionally come to us. I recall one case now. A man of about 45, who considered himself in good health, was about to cross a bridge when, as he expressed it, something gave way as though he might have been struck by lightning, shock came over him, he was blind for a few moments and had to be led into a drug-store where he was taken care of. An examination of that case probably a year before would have shown that that man had no knee-jerks and no pupillary reflexes. It is these sudden episodes that cause accident. I recall the case of an engineer who said that the light suddenly went out of one eye while he was running his engine, but fortunately the vision of the other continued until he could get to a place of safety. I cannot see how we could expect to do anything more practical than to recommend some method to protect the public against these episodes, and possibly the public might consider that any action along this line would interfere with public liberty. That is what we hear as soon as we invoke any arbitrary rule. If the employees in responsible positions were required to submit to a thorough examination, say every year or two, it seems to me this would greatly minimize these dangers. I do not think that much would be accomplished by an examination, no matter how rigid, if it were made only when the person applied for employment.

Dr. Leo M. Crafts, Minneapolis: This subject is of great importance. I hope that Dr. Camp's suggestion will be acted on favorably. I think that we should also include the word "taboparesis." I am reminded of a case that I had about twelve years ago, that of an engineer who had been on the road for several years and whose removal I advised because of tabes. He had marked symptoms, could not walk without a cane, had loss of reflexes, etc. I am not sure whether he had diplopia or not while I saw him. In trying to go through the living-room of his house he became lost and had to hunt around to get to the door. He was sent into the country for about a year's rest, and at the expiration of this time he came into my office and asked for a certificate to go back on the road. I refused to give it to him, stating that he had no business on the railway again. He was not persuaded, however. I heard nothing from him for three or four years, when he sent his compliments to me, and I found that he was back in the service running a switch-engine in the yards of a western city. He must have been taken back on the railway by virtue of his engineer's certificate, for it does not seem to me that any examiner would pass such a case.

Men occupying important positions in the service should be examined once a year, as Dr. Brown has suggested, and, referring to Dr. Ewing's remarks, we ought to urge the doing away with blank forms of examination. We should make out our own complete, independent report, regardless of any forms. A safety campaign is now being carried on over the

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country generally—a campaign that applies to the public, but I do not see that it applies much to the officials or others running corporations. If this safety campaign is needed, it should reach the officials of the railways and be taken up in the surgical associations of the different companies.

DR. LAWRENCE B. PILSBURY, Lincoln, Neb.: Some time ago there was brought to the Nebraska Hospital for the insane a young man of about 30 who had been employed by a large railway system to operate a switch-tower at a junction in one of the smaller towns of the state. The management of this road is a careful one and few disasters occur, but this man had been working so recently that his last pay-check was sent to him after he had been committed to the hospital. This young man had evidently not attracted attention. The only obvious physical sign he showed was foot-drop caused by injury of the muscles of the foot in childhood, a defect which had never been repaired. The man was apparently and unquestionably a paretic, and that he should have been in charge personally of signals and switches, alone in the tower, was obviously preposterous.

DR. CHARLES GORST, Mendota, Wis.: No position connected with a railway is more important to the public than that of the man who runs a locomotive on a passenger train. I believe that a man's personal liberty should not be considered when he is incompetent to fill so important a place. My experience of nine years in the position I now hold, that of superintendent of the hospital for the insane, Mendota, Wis., emphasizes the fact that if proper investigations were made many men who are employed by the railway companies would be found to be incompetent long before the fact is ordinarily discovered. I do not know of any case in which such a man has been found to be incompetent and discharged by the railway company before he has committed some act for which the authorities have taken charge of him and committed him to an institution.

There is no question but that Dr. Brown's idea of frequent examination of employees by properly qualified men is the proper one. I see no reason why this Section should not do what it can for the protection of the public by passing a resolution favoring such examination. A man who was insane in our institution for years and was transferred as a chronic case to a county asylum was paroled by the superintendent of that institution to his brother and soon after was employed by the railway company and made flagman in the yards through which thousands of people passed on trains daily.

DR. CHARLES W. HITCHCOCK, Detroit: A few years ago I saw a case of well-developed paresis in an engineer who later experienced a remission and so far recovered that he made a trial trip with another engineer; but becoming convinced that he would never be able to gratify his desire, he committed suicide.

DR. GEORGE A. MOLEEN, Denver: I am reminded by Dr. Camp's paper of a case of specific thrombosis. About eight years ago a man presented himself with partial paralysis of one side of the body. In the course of the record it developed that he had been a fireman and was still in the employ of the railway company. He had frequently had lapses of consciousness prior to the onset of the weakness which he experienced, and he admitted that often he lost and resumed consciousness to find that the water level in the gage was considerably below the visible line. It occurred to me then to wonder whether or not some of the explosions that sometimes occur might not be due to lapses of this kind. From this it would seem that it is not only paresis, locomotor ataxia and epilepsy to which we should direct our attention, but also syphilis itself. I quite agree with Dr. Brown that examinations should be made at intervals, but the interval of two years is too long. If I recall correctly, the primary infection in this person was about eighteen months previous to the time of the manifestation of the symptoms. When we recall the lapses of consciousness and the possibilities of automatism and automatic acts on the part of men entrusted with the control of engines and having in their charge the lives of many individuals, we begin to shudder as we contemplate these conditions of mind. I think also we have all come in contact with the conditions in arteriosclerosis in which there are epileptiform seizures with a period of unconsciousness, and these acts are often committed by old and trusted employees.

Would it not also, then, be well to examine the condition of the arteries, as evidenced by blood-pressure, at stated intervals? I think that this is a serious question.

DR. C. D. CAMP, Ann Arbor, Mich.: In considering this entire subject we must also, of course, consider the point of view of the railway company, inasmuch as they do not wish to go to any prohibitive expense in making examinations such as the appointment of a competent neurologist might entail. Furthermore, the thing must be done in such a way that the men will not feel that they are continually being spied on.

In the case of one road, the consulting ophthalmologist has a clerk at each of the division points to make visual tests every six months; these clerks, of course, become rather expert. Then the head consultant has several assistants who go about, and whenever a case with any defect is reported to him, it is referred to one of these assistants.

The man who examines the visual acuity repeatedly could also examine the pupillary reflexes without very much additional time, and he could with an ophthalmoscope take a look at the eye-grounds without consuming much time. In the same way the man examining the employees, as they are examined frequently, or even the man who is examining the eye, could make it a practice to test the knee-jerks, without telling why he is doing it.

There could also be a simple suggestion to examiners that they should always inquire for dizziness, that they should ask to see the tongue and incidentally look for masses; in fact, those little points which after all have the highest diagnostic value, could be put in a series of instructions to examiners. I think it should be emphasized, too, that we are not making these examinations entirely for the benefit of the public. After all, the employee himself is very likely to suffer in a wreck; and the railway company is certainly going to suffer as the result of a wreck if it is obliged to pay damages. If we emphasize these two factors, the public will come in for protection at the same time.

FEDERAL CONTROL OVER THE MANUFACTURE OF SERUMS AND VACCINES*

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Under the authority of an Act of Congress, approved July 1, 1902, the Public Health Service maintains a supervision over the manufacture and interstate sale of viruses, serums, toxins and analogous products. In accordance with the provisions of this act, regulations have been promulgated in regard to the licensing, inspection and examination of the products, and also for the suspension or revocation of the licenses of those engaged in the production of biologic preparations for sale in interstate commerce or for importation into the United States.

While the law conveys very broad powers in respect to the supervision of manufacturers and their products and permits restriction of the interstate sale of evidently harmful articles of this kind, it does not give specific authority to refuse to issue a license for a product of unknown or doubtful therapeutic value. The possible abuses that may arise because of this omission are so many and varied that it would appear desirable that further legislation be secured, so as to provide for the

* Read in the Joint Meeting of the Section on Practice of Medicine with the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

proper labeling of all biologic preparations that are still in the experimental stage. Such a precaution on a label would tend to do away with the promiscuous use as therapeutic remedies of biologic preparations which are not thoroughly established, and would thus serve as a safeguard to physicians and their patients. Lacking authority to provide for the differentiation between products of established therapeutic value and those of an experimental nature, the Public Health Service has not been able to take satisfactory action in regard to many of the preparations now on the market which are frankly empirical and almost warrant the appellation of "shotgun remedies." Some of these preparations have either been put on the market by misguided manufacturers or are being marketed and even advertised, because of a supposed demand, with a full knowledge of their lack of scientific basis. Unless it can be shown by satisfactory tests that such preparations are directly harmful or are based on demonstrated false premises, their sale cannot be prevented under existing law, though they may have no therapeutic value and may even do harm to a patient because of his generally lowered resistance to toxic substances.

The justification for existing legislation is amply evidenced by the marked improvement that has taken place in biologic products and in the methods employed in their production. Since the law went into effect there has been a marked improvement in vaccine virus, so that "sore arms" are exceptional rather than the rule, as was formerly the case. On account of commendable competition in developing methods of purification, diphtheria antitoxin is of a higher potency, and serum reactions are now comparatively rare occurrences. Contaminated and weak serums have been detected and caused to be withdrawn from sale; a standard for tetanus antitoxin has been established, so that this important serum is now of a known and higher potency and definite dosage can be had; false and misleading labels have been to a large extent changed; and, in general, the manufacture of biologic products has been placed on a much higher basis as regards their purity, potency and methods of production. While the greatest good from the enforcement of the law has been to the physician and his patients, it has also been of great value to the careful and well-equipped manufacturer in forcing the less careful and poorly equipped producer to comply with the official requirements by improving his methods and facilities so as to insure uniformly safe and potent products.

In connection with the enforcement of this law a large amount of research work has been done in the Hygienic Laboratory. Other than the elaboration of standards of potency for diphtheria and tetanus antitoxins, I wish only to call attention to the work of the Public Health Service in furthering the use of antirabic virus for the prevention of rabies. Up to 1908 practically the only way in which a person could receive antirabic treatment was by going to some Pasteur institute, which frequently necessitated travel for a long distance. As a result of work done in the Hygienic Laboratory it has been shown that the virus may be prepared and shipped long distances and in this way the prophylactic has been made available for many who would not otherwise have received it. During the past five years antirabic virus for the treatment of over 4,000 persons has been sent from the Hygienic Laboratory to state boards of health and others entitled to receive it.

HOW SUPERVISION IS MAINTAINED

In accordance with the law and regulations framed thereunder, all persons or establishments engaged in the manufacture and interstate sale of viruses, serums, toxins, etc., are required to be licensed by the Secretary of the Treasury on the recommendation of the Surgeon-General of the Public Health Service after an inspection has been made of their establishments, methods and products. An inspector visits the establishment and examines carefully into the sanitary condition of the buildings and the condition of the animals, if animals are used for the production of the biologic product, and learns from those who have charge of the scientific work the technic employed; for instance, the methods of bleeding, collecting and storing the products and especially the methods used for safeguarding their purity and potency. He looks into the labeling of the products, paying especial attention to the date when they are labeled to be exchanged. Samples of the various products are also obtained and forwarded to the Hygienic Laboratory for examination.

Foreign establishments desiring to do business in the United States must submit to the same conditions and are required to have a license similar in all respects to that of domestic firms. The collectors of customs are empowered to detain at ports of entry biologic products pending examination in the Hygienic Laboratory as to their purity and potency and as to whether or not the products are correctly labeled as required by the law and regulations. Viruses, serums, toxins, etc., imported from foreign countries, are refused entry by collectors of customs unless prepared in an establishment holding a license or unless intended for experimental purposes.

The results of the examination of the samples obtained by the inspector and forwarded to the laboratory for examination and his report of the inspection form the basis of recommendations for or against the issuance of a license to that particular establishment. The inspector's report, together with the results from the laboratory, are considered by the sanitary board of the Public Health Service, which makes recommendations to the Surgeon-General as to whether a license shall or shall not be granted. In the event that a license is granted by the Secretary of the Treasury it is for a particular product and no general licenses are given for the manufacture of biologic products; but each vaccine, serum, toxin or similar product is considered separately.

After a firm has been licensed to engage in the manufacture and interstate sale of these products, samples are purchased on the market at frequent intervals in various parts of the country and forwarded to the Hygienic Laboratory, where they are examined, first, as to labeling; second, as to the potency of products for which standards have been adopted; third, as to sterility and freedom from toxic properties not inherent in the product itself; and, fourth, as to the amount of preservative. In certain instances they are also examined to determine their harmlessness to healthy individuals. If the samples are found to be deficient in any of the above named points, the matter is at once reported by the laboratory to the Surgeon-General of the Public Health Service, who, in the case of a lack of potency, contamination or excessive amount of preservative, may require the manufacturer to withdraw from the market all of that particular lot of serum that remains unsold. This is not a difficult thing to do, as manufacturers are required to label each lot with a laboratory number and to keep records as to whom the serum has been sold. When an infringement of the law or regulations has been

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discovered during inspection or by laboratory examination, the Surgeon-General recommends to the Secretary of the Treasury that the license of the offending establishment be suspended; and, if the conditions are not corrected within sixty days after suspension, he recommends that the license be revoked and the facts as to the cause of suspension and revocation of license may be published in a circular letter issued by the Secretary of the Treasury.

LICENSE NOT A GUARANTEE OF THERAPEUTIC VALUE

The fact that a firm is licensed to manufacture and sell in interstate trade a virus, serum or similar product does not mean that the government recognizes such a product as valuable for curative or prophylactic purposes. In fact, as pointed out above, under existing law the product may have little or no therapeutic value. Except for certain products for which standards have been established, such as diphtheria and tetanus antitoxins and the potency of vaccine virus, no potency requirements are enforced. In other words, the license to make and sell a product in interstate traffic does not carry a governmental guarantee of its therapeutic efficiency; it simply means that this product has been examined to see that it is truthfully labeled in that it contains the manufacturer's name, the license number and an exchange date, and that it is free from bacterial or toxic properties not inherent in the product itself. For example, some firms are licensed to sell normal horse-serum provided it is so labeled and is free from impurities; also, there are certain serums, such as antityphoid serum, antipneumonia serum and others of like doubtful efficacy, and still other serums or products in the experimental stage of development, which are sold under a license; but the license to sell these products does not mean that the government in any way endorses the present or prospective therapeutic value of the products. This brings up an important question in regard to this class of unknown or experimental preparations. There is no authority for a satisfactory control over these kinds of products at present, and efforts should be made to obtain legislation giving such authority and also giving additional facilities and money for a more strict laboratory supervision, so that we may at least know if they have an experimental basis for their use, or even if they are what they claim to be.

BENEFITS DERIVED

Some of the advantages so far secured in the control of these products by the Public Health Service may be summarized as follows:

1. All manufacturers have been required to put their stables, barns and laboratories in good sanitary condition and to keep them so.

2. When work with tetanus, tuberculosis, etc., is done in laboratories producing diphtheria antitoxin, a complete separation of such work is required.

3. All establishments are required to be equipped with proper laboratory facilities and personnel to insure the safe and efficient preparation of the several products for which a license has been granted.

4. Each lot of vaccine virus is required to be examined, bacteriologically, and a special test made for tetanus bacilli, and detailed records kept of such examinations.

5. The sale of the old style "dry" lymph points is no longer allowed.

6. All animals used for the propagation of vaccine virus are required to be necropsied and the virus from any animals proved to be suffering from a communicable disease other than vaccinia is not allowed to be sold.

7. All serums are now required, in addition to tests for potency, where standards are established, to be examined for and to be found free from bacterial and toxic contamination; to be correctly labeled; to state the date beyond which they cannot be expected to yield their specific effects, and to contain no excessive amount of preservative.

8. Standards for diphtheria and tetanus antitoxins having been established, physicians have a knowledge of the exact amount of the dose used in each instance.

9. A standard for tetanus antitoxin having been established, it is now possible to use known and comparable amounts of the particular make of serum, and thus valuable data may be gathered as to the amount of tetanus antitoxin needed for prophylactic and curative purposes.

10. When the physician uses a package of diphtheria or tetanus antitoxin he may feel assured that every known safeguard has been thrown about its production and that it contains at least the number of antitoxic units stated on the label.

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ANTISTREPTOCOCCUS SERUM*

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In the protection of the animal body against virulent streptococci two factors are known to be of importance. The bacteria are first acted on by opsonin, which is found especially in the blood-serum, and thus prepared for phagocytosis by the leukocytes in which they are destroyed. The normal body usually possesses sufficient antistreptococcic power for its protection against streptococci as they occur on the mucous membranes, tonsils, etc. If the normal resistance is lowered, or an unusual number or highly virulent bacteria gain entrance to the body through some defect in the protective mechanism, the bacteria may multiply and produce disease. When such an infection runs a favorable course the streptococci stimulate the body cells to produce immune opsonin which in turn acts on the streptococci and prepares them for phagocytosis and destruction by the leukocytes. A coincident increase of leukocytes also heightens the power of the body to destroy the invading bacteria. While phagocytosis, following on efficient opsonification, explains the elimination of infecting streptococci, it does not, however, make plain the mechanism by which the toxic effects of the bacteria are overcome. We know but little of the essential composition and action of the so-called endotoxins of streptococci or of the ways in which they are neutralized in the body.

Since living streptococci during the course of an infection stimulate the production of immune opsonin, Nature may be assisted by injecting the bodies of streptococci which have been killed in various ways with the object of calling forth a similar result without the danger of a fatal infection. Dead bacteria have been found to act in a manner similar to the living and on this principle the vaccine treatment of streptococcus infections has been built. Immunity induced in the individual animal by

* Read in the symposium on Serums and Vaccines at the joint meeting of the Sections on Pharmacology and Practice of Medicine of the American Medical Association at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* From the Memorial Institute for Infectious Diseases, Chicago.

the action of living or killed streptococci is, of course, active immunity, the immune bodies being actively produced by the body cells of the host in response to stimulation by the bacteria. Nothing is definitely known of the part played by true antitoxins, if such exist, in antistreptococcus immunity.

If a suitable animal is first injected with small quantities of killed streptococci and at intervals thereafter with increasing doses of killed or living organisms, a high degree of tolerance may eventually be established. The blood of such an animal finally contains streptococco-opsonins and perhaps other antistreptococcus bodies in much larger proportion than that of a normal animal. The serum obtained from such blood is known as antistreptococcus serum. For its production in considerable quantities the horse is usually employed.

If active antistreptococcus serum is injected into normal guinea-pigs in quantities of from 2 c.c. to 6 c.c. and an interval allowed for its absorption, the blood of the animal comes to contain a considerable amount of demonstrable streptococco-opsonin, and the animal can withstand an amount of highly virulent living streptococci which would promptly kill a control animal. The immunity thus produced is, then, a passive one since preformed antibodies are injected. It is of short duration lasting about a week. In animals, antistreptococcus serum has little curative power over an established infection.

Having found that antistreptococcus serum has decided protective and limited curative power in animals, it was natural to infer that it would possess similar activity in man, especially since fresh human serum more readily activates old antistreptococcus serum than does the serum of the animals employed in the tests. Because streptococcus infections in man rarely run so rapidly fatal a course as they do in guinea-pigs, it was expected that antistreptococcus serum might have more curative value in human cases.

A favorable course of a streptococcus infection in man, after the administration of antistreptococcus serum, is usually accompanied by a promptly falling temperature, improvement in the local and in the general toxic conditions, a reduction of the leukocytes in the peripheral blood and a rise in the opsonic index. There may also be an increased phagocytic activity of the leukocytes. The rapid lessening of toxic symptoms and the increased activity of leukocytes suggest some antitoxic process in addition to an increased power of disposing of streptococci through the agency of opsonins.

To secure the best results from the serum it must be brought in contact with the infecting bacteria as rapidly as possible. In urgent cases this is best done by intravenous injection. If the case is less urgent the serum may be introduced intramuscularly or subcutaneously. Absorption from the muscles is much more rapid than from the subcutaneous tissues, and intramuscular injection is to be chosen in cases of urgency when intravenous injection is impossible or contra-indicated. Even the most active antistreptococcus serums possess a relatively limited quantity of antistreptococcus bodies, so that large doses are required to produce results. In most cases from 30 c.c. to 100 c.c. should be given at a time. The full effect is obtained almost at once if given intravenously and in a few hours if given intramuscularly while only after twenty-four to forty-eight hours if given hypodermatically.

A repetition of the dose is indicated when the former symptoms return or when improvement comes to a standstill. A fall of the opsonic index after from twenty-four to thirty-six hours, following an earlier rise, would appear to point to the need of repeating the injection even in the presence of apparent improvement. The drop in opsonin would indicate the exhaustion of that furnished by the serum. A continued high leukocyte count may also serve as an index to the need of more serum. The plan of procedure should be to secure complete control of the infection as quickly as possible. It is hardly necessary to emphasize the advantage of early and active treatment for securing the best results. It is of prime importance that a bacteriologic diagnosis be made in cases treated with the serum. The serum acts as a specific against streptococcus infections only and in other infections it is of no value, in fact, the toxic effects of the horse-serum may even be harmful. In severe streptococcus infections any toxic effects from the serum are more than counterbalanced by the control secured over the diseases.

Much difference of opinion has existed as to the therapeutic value of antistreptococcus serum. The general opinion of those who have employed it in large doses is that it does good. The variable course run by these cases when treated expectantly renders it very difficult to judge the effects of the serum in the individual case and any satisfactory impression can only be obtained by the study of a considerable series of cases. It must always be borne in mind that a serum must be active in order to produce results and that some antistreptococcus serums which contain no demonstrable antistreptococcus bodies have been found on the market. Miss Tunnicliff and I have found that the protective power of serums is in proportion to their content of opsonin which can be activated by fresh serum. By an estimation of the opsonic content of a serum and of its power to protect animals against a fatal dose of a highly virulent culture, some standardization should be possible. This, while it would not be so delicate as the method employed in the standardization of diphtheria antitoxin, would at least protect the clinician from the use of an inert serum.

The local use of antistreptococcus serum in local streptococcus infections has not been as generally employed as would seem desirable. In many such cases the serum can be brought in contact with the infecting organisms under favorable conditions, and a more extended trial in this manner is to be recommended. The immunizing power of antistreptococcus serum in animals is very marked. There would seem to be an opportunity to make use of it for immunizing purposes in man more generally than has been done.

The multiplicity of strains of streptococci which infect man is so great that a serum which is to be employed in the treatment of all of them should be prepared by injecting the animal yielding the serum with all the varieties obtainable. It is possible that better results might be secured in infections caused by special varieties by using a serum from an animal immunized against the particular variety causing the infection.

Diseases Transmitted by Mosquitoes.—It is well known that mosquitoes transmit malaria and yellow fever. It is equally well known that they transmit the *Filaria sanguinis hominis*. They are also accused of transmitting the specific cause of dengue. Among the lower animals, they transmit a disease of swallows similar to malaria. It is thought also that they transmit a certain dog disease of the hematozoon class. And it is altogether probable that diseases among cold-blooded animals may prove to be transmitted in the same way. There is an infinity of investigating yet to be done along these lines.—*Bull. Florida State Board Health.*

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TREATMENT OF PNEUMONIA BY MEANS OF SPECIFIC SERUMS*

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It is now over twenty years since the first attempts were made to treat patients suffering from acute lobar pneumonia by means of serum obtained from animals immunized to pneumococcus. In 1904 Anders[1] collected the reports of 535 cases treated in this way. He concluded that the practical results obtained by the use of antipneumococcus serum did not warrant its general use. Nevertheless, the theoretical study and practical application of antipneumococcus serum have not ceased. Although it has been impossible to demonstrate any striking lowering of mortality in a large series of cases, yet certain good clinical observers have felt that in certain individual instances the results were striking. The experimental evidence, moreover, has been sufficient to inspire hope in the minds of many. It has become evident, however, that the problem can be solved only by more refined and critical methods than those previously employed.

It has been known since 1891 that susceptible animals may be rendered resistant to the action of pneumococci by the injection of increasing and properly spaced doses of pneumococci, beginning with the dead organisms. Moreover, it was early shown that if a very small amount of the serum of the immunized animals is injected into a second animal, this animal for a short time is also immune. This experiment is so striking and fundamental that it is little wonder that the efforts to find methods for using this serum therapeutically in man have been persisted in. The results of treatment in animals, however, as contrasted with prevention or protection, have not been so satisfactory. While a very small amount of serum will usually protect an animal from a large dose of bacteria given with the serum or a very short time afterward, even a large amount of serum will usually not cure the animal after infection is well advanced. Evidence is not lacking, however, that even in animals, such immune serums may have curative as well as protective action. Efforts in treatment have usually been attempted in rabbits and mice, which are extremely susceptible to pneumococcus infection and in which the infection runs a very rapid course.

When injections of pneumococci are made directly into the lungs of guinea-pigs, the infection runs a slower course, and Neufeld and Ungermann[2] have shown that in such cases, if injections of even small amounts of serum are made as late as three hours following the infection, recovery occurs in a large proportion of the animals. It is possible, therefore, that in man, in whom the pneumococcus infection runs a much more chronic course and tends to become localized, the serum might be efficacious in treatment, if a suitable method for its administration should be discovered. During the past few years, moreover, experimental studies have shown possible reasons why immune serums have not proved more efficacious in the past, and have indicated methods by which they may be made more efficacious in human infection.

In titrating immune serum against varying doses of pneumococci by injection into mice, Neufeld and his assistants have shown that a certain amount of serum, in relation to the body-weight, is required to protect. This amount protects against many times the lethal dose. On the other hand, a slightly smaller dose may not protect at all, even against only a very small multiple of the minimal lethal dose. In other words, such a serum does not obey the law of multiple proportions and to be efficacious, even against a very mild infection, it must be present in the body in a given concentration. This concentration they have called the *Schwellenwert*, or threshold concentration. Reckoning from their experiments on mice, they estimate that in man the curative dose of the variety of serum tested by them must be at least 75 c.c. Since curative injections in man, however, are ordinarily not made until many hours after the infection has started, it is probable that in most cases the doses must be much larger than this. It is evident, therefore, that one reason why antipneumococcus serum has not been more efficacious in the past is that it has not been administered in sufficiently large doses.

On the other hand, experiments performed by Dochez have shown that there is a maximum degree of infection against which no amount of serum, however large, is able to protect. It would therefore seem that one of the factors of the protective mechanism must be supplied by the body, and that, when the infection is very great, a sufficient number of immune bodies may be supplied by the administration of serum, but the body cannot react to a sufficient extent to adequately supply this second factor. This suggests that in order to obtain results from serum, it should be administered early, before the infection has reached too extreme a grade, beyond which no amount of serum can be effective, and also offers a possible explanation of why in certain cases, such as the one which I shall mention, the serum seems to have absolutely no effect.

Further studies indicate still another and more important reason why antipneumococcus serum has not proved of value in the past, and explain why even the administration of very large doses early in the disease is likely to prove of value in only a small proportion of cases. In the past, antipneumococcus serum has been administered indiscriminately in all cases of pneumonia, no effort being made to determine in the individual case the nature of the bacterium causing the infection. It has long been known that characteristic lobar pneumonia may be caused by a number of other organisms besides the pneumococcus, such as the streptococcus and influenza bacillus. It is well recognized that an antipneumococcus serum cannot be effective in case the disease is due to an organism other than the pneumococcus, since such serums are as rigidly specific in their immune reactions as is antidiphtheritic serum for diphtheria toxin. It must be granted, however, that a large majority of the cases of typical lobar pneumonia are due to pneumococcus, so that if such a serum were efficacious against all such cases, the results of its administration would be manifest.

Neufeld found an antipneumococcus serum prepared by him by the immunization of a horse with a given race of pneumococci effective against the race of pneumococci used for immunization and also against certain other races obtained from cases of pneumonia; but against still other races of typical pneumococci, he found that it had practically no effect. In order to overcome this difficulty, Neufeld had recourse to an expedient pre-

* Read in the symposium on Serums and Vaccines at the joint meeting of the Sections on Pharmacology and Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. Anders, J. M.: Serum Treatment of Pneumonia, THE JOURNAL A. M. A., Dec. 10, 1904, p. 1777.

2. Neufeld and Ungermann: Berl. klin. Wchnschr., 1911, xlviii, 717, 1010

viously employed in immunization work, that is, the preparation of a serum by the inoculation of a number of different races of pneumococci, hoping thus to prepare a polyvalent serum efficacious against practically all the races likely to be encountered. This has seemed to me a crude method of dealing with the problem and one not likely to advance our knowledge of the exact conditions concerned.

Without going into the details of the methods which have been described elsewhere by Dochez, it may be stated that the pneumococci isolated from cases of pneumonia which I have studied may be divided into four groups. The organisms belonging to each of the first two groups are specific, so far as their immune reactions are concerned. An immune serum produced by the injection of a horse with a race belonging to Group 1 has a specific action against all the members of Group 1, but has no effect on the organisms of any of the other groups. In like manner, an immune serum produced by the injection of a horse with a pneumococcus belonging to Group 2 is protective against all the other members of this group, but has no effect against the members of any of the other groups. In Group 3 are included the organisms of the so-called *Pneumococcus mucosus* type. These organisms have very large capsules and produce a sticky exudate in animals. So far it has not been possible to produce an active immune serum against this variety, though an effective active immunity may be obtained. An immune serum produced by a member of any of the other groups has no protective power for any race of this group. In Group 4 are included all the races against which Serums 1 and 2 are not effective and which, from their other properties, do not belong in Group 3. Animals may readily be immunized to any member of this group, and the serum of the immunized animal is protective against the race used for immunization. In no instance, however, has this serum been found effective against any other race of this group or against the organisms of the other groups. So far as cultural and morphologic characters are concerned, no constant group differences have been discovered between the members of Groups 1, 2 and 4. By means of the agglutination reaction of the various races, however, it has been found possible to group them in exactly the same manner as by protection experiments.

It has become evident, therefore, that while a large majority of cases of pneumonia are due to pneumococcus, so far as immune reactions are concerned the cases of pneumococcus pneumonia are caused by organisms of at least four different types, and, from the point of view of specific therapy, this is equivalent to saying that they are due to at least four organisms. In seventy-four cases of pneumonia studied the number of cases found to be due to organisms belonging to each of four groups is shown in Table 1.

TABLE 1.—CLASSIFICATION OF SEVENTY-FOUR CASES OF PNEUMONIA

Type of Organism	Number of Cases	Percentage
1	35	47
2	13	18
3 (mucosus)	10	13
4 (heterogeneous)	16	22

It is now evident that in studying the effect of an immune serum on patients with pneumonia, but slight conclusions can be drawn from its indiscriminate employment in all cases. First, we must know the type of organism used for its production, and second, it must be employed only in cases due to organisms of this type. So far, it has been possible to produce a serum of high protective power against organisms of Type 1, and a second serum, only slightly less efficacious, against organisms of Type 2. As previously stated, it has been impossible to produce a serum active against organisms of Type 3. To produce a serum active against organisms of Type 4, it would be necessary to immunize an animal against every obtainable race of this group. This would not be practicable. So far as the treatment of pneumonia is concerned, however, this is of minor importance, since our observations indicate that pneumonia due to organisms of Type 4 is of relatively slight severity, and most of the patients recover without any specific treatment. This is shown in Table 2.

TABLE 2.—MORTALITY

Cases Due to	No. Patients	Died	Per Cent.
Type 1	34	8	24
Type 2	13	8	61
Type 3	10	6	60
Type 4	15	1	7
Total	72	23	32

At present, therefore, the problem has resolved itself into treating the cases of pneumonia due to organisms of Type 1 and Type 2 with Serum 1 and Serum 2. In order to treat the individual case, however, it is necessary to have a method of determining very promptly, after the patient comes under observation, the type of organism concerned. It has been found possible to do this by using the following method: When a patient with pneumonia is admitted to the hospital, a culture is immediately made from the blood and also one from a portion of sputum coughed up from the lung, or, when this is not obtainable, a culture is made directly from the lung by the insertion of a needle. This procedure seems to be without danger. When there are large numbers of virulent organisms in the sputum, a culture may be most rapidly obtained by injecting the sputum into the abdominal cavity of a mouse. After four or five hours the peritoneal cavity may be washed out with salt solution and the cells thrown down in the centrifuge; a suspension of the organisms is thus obtained. However the culture is obtained, the agglutination test is at once applied. If the organism fails to agglutinate with either Serum 1 or Serum 2, it is, of course, useless to undertake serum treatment. If, however, one of the serums agglutinates the organism, treatment may be commenced at once with the appropriate serum. Later the organisms have been studied by testing the protective power of the serum, and in all cases the protection test has corresponded with the agglutination test.

We have now shown certain reasons why the use of immune serum in the past has not been efficacious, and methods have been described whereby, theoretically at least, such serum may be rendered effective. It may be assumed that given serums of high protective power against organisms of Groups 1 and 2, the early determination of the nature of the infecting organism and the early administration of large doses of the appropriate serum should have a favorable influence on the course of the disease. So far it has been possible to test this assumption on only a comparatively small number of cases, since the work so far has been largely preliminary and done with a view to establishing the practical application of the serum on a sound experimental basis.

Serum has now been administered in twenty cases of pneumonia. In one of the first cases a further study of the organism showed it to be of Type 4, so the use of serum was discontinued. In two cases the patients were

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admitted in the last stages of the disease and the serum was administered only a few hours before the patients died. Seventeen cases have therefore been treated with the serum. Of these, fourteen were due to organisms of Type 1 and three to organisms of Type 2.

The method of administration of the serum was as follows: On admission, 2 c.c. of serum were injected subcutaneously to discover if the patient was hypersensitive. As soon as the type of organism was determined, from 50 to 100 c.c. of the serum, diluted one-half with salt solution, were injected intravenously. The condition of the patient served as a guide in the later treatment. Usually the serum was not administered oftener than every twelve hours. The patients treated received totals of from 190 to 460 c.c. of serum, except one, who received a total of 700 c.c. of serum. Treatment was commenced on the third day in six cases, the fourth day in four cases, the fifth day in three cases and the sixth day in four cases.

The patients treated were all seriously ill, the most severe cases we have had during the winter. In the fourteen cases due to Pneumococcus 1, all of the patients recovered but one, and in the three cases due to Type 2, one patient died. This patient, however, objected to the treatment and would not allow its continuation, so it was not thoroughly carried out. When we consider that the mortality among the cases due to Types 1 and 2 is very high, the result is certainly not discouraging. The number of cases is much too small, however, for any conclusions to be drawn from the results as regards mortality.

At present conclusions as to the efficacy of the serum must be based on other criteria. Let us first consider the effect on the clinical course of the disease. Temperature curves are not here presented, since erroneous conclusions may be drawn unless all the curves are presented, and in the present instance this is impossible. Following practically all the injections, a reaction has occurred. The temperature usually rises, and then falls, but does not necessarily remain low. In two instances the rise of temperature has been marked. In the other cases the rise of temperature following the injection was only a degree or so. In all the cases except the fatal ones, the serum has apparently had an ultimate favorable effect in lowering the temperature and shortening the course of the disease, though, of course, this is a very difficult matter of which to be absolutely sure. In no case was one injection of the serum sufficient to bring on a crisis. All the patients seemed to feel better following the injection of the serum, and in a number of cases the apparent lessening in the degree of intoxication was very manifest.

When the treatment was commenced early, no extension of the involvement of the lung occurred. On the other hand, however, there was no special tendency in the treated cases for the lung lesion to resolve rapidly. If anything, there seemed to be a tendency for resolution to be delayed in these cases. This has been noted by others in certain cases treated by serum. One of the patients developed a pneumothorax with empyema. Operation was performed and recovery ensued. Fortunately, this was not one of the patients in whom the lung was punctured for culture. Three patients later developed signs of fluid, and aspiration of small amounts of fluid was performed. The fluid in these cases was sterile and operation was not necessary.

More important than the foregoing criteria, however, in indicating an effect of the serum, are the following observations, since they have depended solely on objective procedures: First to be mentioned is the effect of the serum on the organisms in the blood. In eight cases pneumococci were isolated from the blood before the treatment was commenced. In all cases blood-cultures were made before each treatment, and in all of these cases after one treatment and before the second (or within from eight to twelve hours) the blood had become sterile. The conclusion seems justified, therefore, that one large dose of active serum given intravenously is sufficient to sterilize the blood. It also seems certain that if the organisms are not present in the blood, the administration of the serum will prevent their invasion.

Second, in a previous study of the protective substances in the blood-serum of patients with pneumonia,[3] it has been shown that, as a rule, the appearance of protective substances in the blood, when demonstrable, coincides rather sharply with the period of critical fall in temperature and the disappearance of symptoms. Before the crisis they are not present in the blood in any measurable degree.

A similar study has been made by Dochez of the protective substances in the serum in a number of the cases of pneumonia treated with serum. In all the cases studied, it has been possible to demonstrate the appearance of such substances in considerable amounts in the serum very shortly following the administration of one dose of the immune serum, even when this serum has been administered early in the disease, at a period when such protective substances are otherwise never present. These substances persist, and in case they play a part in the mechanism of recovery, as was concluded from the previous study, it is evident that their appearance indicates a favorable action of the immune serum.

The results obtained, therefore, from the clinical and laboratory study of this series of cases of pneumonia treated by the injection of large amounts of appropriate serum, seems to indicate that a method has been devised for the successful specific treatment of at least a portion of the cases of acute lobar pneumonia.

The mode of action of immune serum in these cases is still obscure. We have found no evidence of a bactericidal action of this serum, either *in vitro* or *in vivo*. The evidence that the effect is due, to any considerable degree, to the presence of bacteriotropic or opsonic substances is still inconclusive. The effect on the patients seems to indicate that the effect to some extent, at least, may be due to the presence of antitoxic substances. Until the toxin responsible for the symptoms in pneumonia is isolated, however, the final proof of antitoxic action cannot be demonstrated. It has been shown,[4] however, that when living pneumococci are dissolved in bile, the resulting solution, when injected into rabbits and guinea-pigs, is very toxic. By means of experiments on animals, which will be reported elsewhere, it has been possible to demonstrate that the toxic action of such an extract may be neutralized by the addition of proper amounts of the corresponding immune serum. Such extracts have also been found to be lytic for red blood-corpuscles, and it has been possible to inhibit this lytic effect by means of the corresponding immune serum. It is therefore evident that in case this toxin plays a rôle in the symptoms of this disease, the action of the serum in man may be due, in part at least, to its antitoxic properties.

3. Dochez, A. R.: The Presence of Protective Substances in Human Serum During Lobar Pneumonia, Jour. Exper. Med., 1912, xvi, 665, abstr., THE JOURNAL A. M. A., Dec. 7, 1912, p. 2094.

4. Cole, Rufus: Toxic Substances Produced by Pneumococcus, Jour. Exper. Med., 1912, xvi, 644, abstr., THE JOURNAL A. M. A., Dec. 7, 1912, p. 2094.

SUMMARY

Antipneumococcus serum, in order to be effective, must be given early, in large amounts. Since pneumococci, so far as their immunologic properties are concerned, are divided into distinct groups, it is necessary in any case to administer the serum active against the group to which the organism infecting this case belongs. Highly active serums against two groups of pneumococci have been obtained, and treatment has been carried out in a small number of cases. The effect in these cases has been favorable and the mortality has been very low. In judging of the value of the serums, however, other facts are considered of more importance; namely, first, that bacteria in the blood are destroyed, and second, that immune substances, which ordinarily appear in the blood about the time of crisis, appear in the treated cases very soon after the administration of the serum. Lastly, there is some experimental evidence that part of the action of the immune serum may be antitoxic.

Sixty-Sixth Street and Avenue A.

PROGRESS IN ANTITYPHOID VACCINATION DURING 1912 *

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Not until the close of the past year, 1912, has it been possible to know how much protection can be obtained from the use of antityphoid vaccine when administered to a large number of men of susceptible age. In the latter part of 1911 the use of antityphoid vaccine was made compulsory for all men in the service under 45 years of age, and as a result we now have records for the year 1912 covering approximately 85,000 vaccinated men. Of these 58,000 were stationed in the United States proper and the remainder in the colonies.

TABLE 1.—TYPHOID FEVER—UNITED STATES—ENLISTED AMERICAN TROOPS

Year	Mean Strength	Absolute Cases	No. of Deaths	To Each 1,000 Soldiers, of the Command, the Ratios Are For Cases	For Deaths
1901	26,515	250	17	9.43	.64
1902	39,736	341	34	8.58	.86
1903	42,264	246	12	5.82	.28
1904	43,940	247	12	5.62	.27
1905	42,834	153	13	3.57	.30
1906	40,621	230	12	5.66	.28
1907	35,132	124	7	3.53	.19
1908	46,316	136	11	2.94	.23
1909	57,124	173	16	3.03	.28
1910	55,680	129	9	2.32	.16
1911	55,240	44	6	0.80	.11
1912	58,119	15	2	0.26	.03

Table 1 shows the typhoid experience of troops in the United States for the past eleven years; the average strength of the home army, the number of cases and deaths are given, and also the morbidity and mortality per thousand of mean strength.

To elucidate this and the following tables the following data are furnished: Voluntary vaccination was begun in March, 1909, and 830 men were vaccinated during that year; too small a number—the strength of the army considered being 57,124—to influence the ratios. In 1910 a much larger number, 16,093, were immunized, and some effect on the morbidity and mortality rates became apparent, both being the lowest ever recorded in the medical history of the Army. In 1911, however, prophylactic immunization was even more generally used. Up to March it was entirely voluntary, but during that month was made compulsory for the Maneuver Division, about 20,000 men, assembled in Texas and along the Mexican border. In June the order was extended to all recruits, from 2,000 to 3,000 per month, since which time all recruits have been given the initial dose of typhoid vaccine as well as small-pox vaccination on the first day of service. The last and most important step was the extension of compulsory vaccination to all persons in the military service under 45 years of age, and this was made in the last quarter of 1911. The full effect of antityphoid vaccination was not, however, apparent until recently, when the statistics for 1912 were compiled.

TABLE 2.—TYPHOID, CASES, DEATHS, ETC.—OFFICERS AND MEN—UNITED STATES PROPER

Year	Total Cases	Total Deaths	Infected Prior to Enlistment	Among the Vaccinated No. of Cases	No. of Deaths
1909	170	16	?	1	0
1910	139	10	?	4	0
1911	44	6	?	7	0
1912	18	3	5	6	0

Table 2 covers only the period during which vaccine has been used, and differs from Table 1 in including officers with the enlisted men. It also shows the number, during 1912, who developed the fever before immunization could be carried out, patients undoubtedly infected before enlistment; in addition, the number of cases occurring each year among the vaccinated is stated.

TABLE 3.—TYPHOID, 1901-1912, FOR THE WHOLE ARMY, AT HOME AND ABROAD—OFFICERS AND ENLISTED MEN

		Cases		Deaths		Occurring Among Those Who Were Vaccinated	
Year	Mean Strength	Number of	Ratios per 1,000 of Mean Strength	Number of	Ratios per 1,000 of Mean Strength	Per Cent. of Total Cases	Cases	Deaths
1901	81,885	552	6.74	74	.88	13.0	..	..
1902	80,778	565	6.99	69	.85	12.2	..	..
1903	67,643	348	5.14	30	.44	8.6	..	..
1904	67,511	293	4.35	23	.33	7.8	..	..
1905	65,688	206	3.14	20	.30	9.7	..	..
1906	65,159	373	5.72	18	.27	4.8	..	..
1907	62,523	237	3.79	19	.30	8.0	..	..
1908	74,692	239	3.20	24	.31	10.0	..	..
1909	84,077	282	3.35	22	.26	7.8	1	0
1910	81,434	198	2.43	14	.17	7.1	7	0
1911	82,802	70	.85	8	.10	11.4	11	1
1912	88,478	27	.31	4	.044	14.8	8	0

The use of the typhoid prophylactic has not, however, been confined to the continental limits of the United States, but has been used also in Porto Rico, Panama, Alaska, Hawaii, the Philippines and China. Table 3 gives the typhoid experience for the entire army, at home and abroad, officers and enlisted men, for the past eleven years, the same period covered by Table 1.

It will be noticed that the lowest death-rate attained previously to the introduction of vaccination was 27 per hundred thousand in 1906, and the lowest morbidity was 320 per hundred thousand in 1908. From these two low points, the best ever attained under sanitary measures alone, the rates have fallen precipitously to 4.4 and 31 per hundred thousand, respectively. In 1912 the number of cases in the entire service was reduced to one-tenth and the number of deaths to one-sixth of the best record before vaccination, and for many reasons this radical reduction in our rates can be shown to be due to the typhoid prophylactic.

* Read in the Symposium on Serums and Vaccines at the joint meeting of the Sections on Pharmacology and Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

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Charts 1 and 2 express graphically the morbidity and mortality rates given in Table 1, and the parallelism shows quite clearly that the improvement is not confined to cases only, but is equally evident in the number of deaths, about which there can be no doubt or question as to the diagnosis.

Chart 3 is a graphic chart of the non-effective rate for typhoid and paratyphoid for ten years. This ratio is a true measure of the amount of sickness in the Army from these two diseases; it shows the number of days lost per thousand men of average strength for the year, including both days spent in hospital and those spent in quarters or on leave of absence during the period of convalescence, and it shows very clearly the great gain in efficiency since the introduction of vaccination; the lowest non-effective rate previously to vaccination was ten times the rate for 1912. A study of this chart alone should carry conviction to any contractor or large employer of labor or to any one responsible for the health of many persons, such as educators and the superintendents of large institutions.

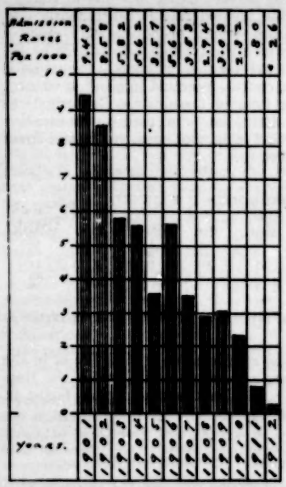

Chart 1.—Admission rates for typhoid, United States (enlisted men).

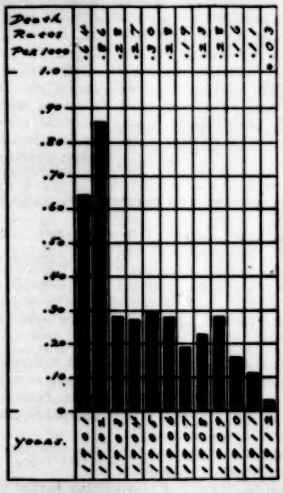

Chart 2.—Death-rates for typhoid, United States (enlisted men).

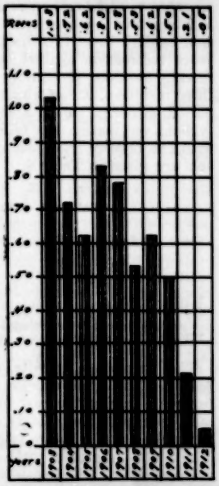

Chart 3.—Non-effective rates for typhoid for the Army—officers, American troops, Porto Ricans and Philippine scouts; includes paratyphoid.

The question of correct diagnosis is one which merits consideration; it is conceivable that some mild cases of typhoid fever might masquerade under other names and, to a certain extent, vitiate the statistics. For this reason a study has been made of the rates for malaria and undetermined fevers in comparison with typhoid, and the study shows a diminution of all three; it is therefore clear that no appreciable number of cases of typhoid have masqueraded under these heads.

It is still too early to obtain complete records for any part of 1913, but reports for the first five months have been received from all posts in the United States and they are given in Table 4, in comparison with those of previous years. The last case of typhoid in the Army occurred Dec. 19, 1912, in an unvaccinated man.

The significance of a statistical table is not readily apparent without comparison with familiar facts, and for this reason Table 5, comparing typhoid death-rates in the army with those in civil life, has been prepared.

It is interesting to note that even before the introduction of vaccination there was less typhoid in the Army, as a rule, than among the civil population of the registration area. In eight of the past ten years the Army rate has been lower than the civil, and during the past three years, that is, since antityphoid vaccination has been used at all extensively, it has been very much lower; and this is true notwithstanding the considerable and progressive decrease in the civil rate, which, for 1911, was the lowest yet recorded by the Census Bureau.

In a recent issue of THE JOURNAL,[1] can be found the typhoid rates for the larger cities of the United States, and it will be seen that in only one (Cambridge, Mass.) was the 1912 rate lower (2.8) than for the Army. The thought readily suggests itself that extensive use of vaccine in civil life would bring about a corresponding improvement.

The duration of the immunity obtained from the vaccine used in our service remains unknown. The idea that it lasted only so long as agglutinins or other antibodies were demonstrable in the blood-serum was, of course, untenable, since we know that following an attack of typhoid fever agglutinins cannot be detected for more than a few months, yet the immunity remains, as a rule, for life. Immunity after vaccination among English troops in India[2] does not appear to last over thirty months, but for various reasons we expect, and are obtaining, a longer period of immunity. Definite deductions, however, cannot yet be made because of the com-

1. Typhoid in the Large Cities of the United States, special article, THE JOURNAL A. M. A., May 31, 1913, p. 1702.
2. Firth: Jour. Roy. Army Med. Corps, 1911, xvi, 589.

paratively small number of men inoculated during the first two years. Another obstacle is the occurrence of an unknown number of cases of paratyphoid fever, clinically indistinguishable from typhoid itself. We now know that such cases cannot be correctly diagnosed by agglutination reactions alone, since these are frequently misleading, but that blood-cultures are necessary. Until paratyphoids are correctly diagnosed and excluded from the tables, it will be impossible to know the exact limit of immunity. It, no doubt, diminishes gradually, as after vaccination against small-pox; and the practice has been adopted of revaccinating against both typhoid and small-pox at the beginning of each four-year period of enlistment in the Army. This is done, not because there is good evidence that the immunity has all disappeared, but for the reason that it does not seem wise at present to trust to anything less than the maximum immunity obtainable.

The Army is as well protected against small-pox as repeated vaccination can make it, and for this reason it is interesting to compare the results obtained by vaccination against these two diseases. During the past four years vaccination against small-pox has failed in conferring absolute protection against infection in fifty-three instances, one of which was fatal; during the same period, although among a smaller number of men, antityphoid vaccination has failed only twenty-seven times, with one fatality from hemorrhage. The absolute numbers are given in Table 6.

TABLE 6.—COMPARISON OF SMALL-POX AND TYPHOID VACCINATION—ENTIRE ARMY—OFFICERS AND ENLISTED MEN

	Small-pox			Typhoid		
Year	Number Vaccinated	Cases	Deaths	Number Vaccinated	Cases	Deaths
1909	74,692	7	0	830	1	0
1910	81,434	17	1	16,093	7	0
1911	82,802	29	0	30,000?	11	1
1912	88,478	9	0	88,478	8	0
Totals	.....	53	1	.....	27	1

cination is needed by persons living in a city or country district in which the typhoid rate is continuously low. If, however, a person, young or adult, leaves such a region for one in which the typhoid rate is high or the chances of exposure greater than at home, vaccination is indicated. It is, of course, indicated in cities or country districts with high typhoid morbidity. Revaccinations may be managed after the pain used in vaccination against small-pox, that is, in childhood, youth, and again when exposure threatens.

TABLE 4.—TYPHOID CASES—UNITED STATES—OFFICERS AND ELISTED MEN—U. S. ARMY*

Years	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total First 7 Months
1908	5	6	4	2	3	11	14	31	25	26	12	8	45
1909	4	10	6	4	11	15	26	14	16	45	20	6	76
1910	8	11	1	4	2	6	12	27	21	16	20	11	44
1911	3	3	3	7	4	4	4	7	4	4	1	0	28
1912	1	2	2	0	0	3	1	4	1	4	0	1	9
1913	0	0	0	0	0	..	..	..	..	..	..	..	0

*Paratyphoid fever included in figures for 1908, but excluded in other years. Cases of paratyphoid: 1909, 3; 1910, 3; 1911, 2; 1912, 3; 1913 to date, 0.

The immediate results of vaccination have been described in former articles and will not be referred to further. During the past four years over 200,000 persons, mostly in the military or naval services, have been immunized without any fatalities or untoward results. There have been no reports of cases indicating that the vaccination has activated latent tuberculosis or any other disease; in fact, as regards tuberculosis, there has actually been a diminution in the number of cases of all classes of tuberculosis during this period.

TABLE 5.—DEATH-RATES PER ONE HUNDRED THOUSAND POPULATION

Year	Army United States Proper	Registration Area U. S. Census
1903	28.0	34.1
1904	27.0	31.7
1905	30.0	27.8
1906	23.0	31.3
1907	19.0	29.5
1908	22.0	24.3
1909	28.0	21.1
1910	16.0	23.5
1911	11.0	21.0
1912	3.0	?

We make it a rule to vaccinate the healthy only, and any febrile illness, whatever its nature, automatically postpones vaccination. It is perhaps to this precaution that we owe our freedom from bad results.

The practice of antityphoid vaccination has been a pronounced success in the military and naval services, in hospitals, schools, institutions and in the camps of pleasure-seekers and contractors; in fact, wherever in military and civil life it has been used. We feel that its more general use, especially among the young, is advisable. The fact that it occasionally fails to confer complete protection is not a valid objection to its use, but rather an indication for its repetition at intervals to be determined in the future. A practical program is easily formulated on the following basis: No prophylactic vaccination is needed by persons living in a city or country district in which the typhoid rate is continuously low. If, however, a person, young or adult, leaves such a region for one in which the typhoid rate is high or the chances of exposure greater than at home, vaccination is indicated. It is, of course, indicated in cities or country districts with high typhoid morbidity. Revaccinations may be managed after the pain used in vaccination against small-pox, that is, in childhood, youth, and again when exposure threatens.

It will certainly be as efficacious in civil life as in the Army, and its more general use will hasten the time when typhoid fever will become a negligible factor in our public-health problems.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ANDERSON, COLE, WEAVER AND RUSSELL

DR. JOSEPH L. MILLER, Chicago: In the study of the various phases of disease there is none which probably offers so many difficulties as the study of the value of therapeutic measures; and in the study of the value of therapeutic measures there is no class of diseases so difficult as the acute infections, because they are largely diseases which have a self-limited course and in which there is a large percentage of spontaneous recoveries and a great variance in different epidemics, as well as in the intensity of the infection in individual cases. It, therefore, becomes necessary that the person undertaking the study of any therapeutic agent shall have had either a wide experience in the study of the diseases in which he has kept careful individual data, or else a suitable number of control cases. In a study of this character it is well for us to draw a sharp line of distinction between medical impressions and medical facts. The papers to which we have listened to-day are of especial interest and value because they deal with facts, not with medical impressions.

DR. WALTER V. BREM, Los Angeles: Advantage ought to be taken of this time to speak of those doubtful laboratory products the exploitation of which has so confused the minds of many of the men in the profession recently and against which the government is at present unable to protect us.

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The first of these is Phylacogen, or Schaefer's Vaccines. Some time ago I attended a meeting in southern California at which Dr. Schaefer read a paper. He stated that he had treated a case of tuberculous meningitis with tubercle Phylacogen. He thought that the evidence that this case was tuberculous meningitis was complete because he had a spinal fluid in which the mononuclear cells were increased and in which the acid-fast bacilli were found. He said also that the Nonné test for globulin was absent. In the discussion I asked him if animals had been inoculated; he said they had not. He was much surprised that I would not accept the case, without animal inoculation, as a case of tuberculous meningitis. He reported that the patient had reached a normal temperature, with relaxation of the muscles of the neck and disappearance of other symptoms by the end of three days, after three injections of Phylacogen, and that six weeks after treatment had been begun the man was attending to his business regularly.

In the further discussion I pointed out that we had not been given reports from men whom we knew as to the action of Phylacogen. I said that we should have had such reports before the Phylacogens were put on the market. I was told that Parke, Davis & Co. had put Phylacogens in the hands of seven hundred physicians, and that the reports from these physicians were obtainable or were available for inspection, in the files of the house. I replied that we did not want to go to a commercial house for our scientific data; that, so far as I could find, Dr. Schaefer himself had published only one report on the subject of Phylacogens, and that was in a journal said to be controlled by the commercial house selling the Phylacogens. I was able to find only two or three other reports in our medical literature, and these were of insufficient character, by men whom we did not know. I said that we wanted reports from authoritative sources in our own profession, from men whose observations we knew we could trust and who had no commercial axe to grind; men who have at heart the good of humanity.

It does seem to me now, however, that the immense sale of these Phylacogens and the number of people being experimented on demands that they be investigated by men equipped to carry out the investigations in a thorough way.

DR. W. W. TOMPKINS, Charleston, W. Va.: I have seen three cases of rabies in the past twelve months, one in a man 69 years of age, another in a boy of 9 and a third in a girl of 5 years. I should like to ask one question in this connection: If a man who was bitten by a dog was presented for treatment, and the symptoms of rabies had developed, should he be informed that there is no authority for treating him, moreover that it would be ineffectual to give him any treatment?

About one-fourth of our population is colored, and these colored people, relatively speaking, are bitten much more frequently than are the white people, for they have more pet dogs than the white people have. I have never known one of these colored people to die of hydrophobia or rabies. Furthermore, in the cases that I have observed, those persons who were lacerated and badly torn have not developed the disease, and generally those who were just bitten slightly did develop it.

Every now and then we see or hear of cases of typhoid carriers like that of Typhoid Mary; I should like to ask Major Russell whether or not a carrier if injected with typhoid virus would cease to be able to communicate the disease.

DR. H. S. MUNRO, Omaha: Nine-tenths of every patient's psychophysical potentialities are dormant and are utilized or available only when called into action by the influence of environmental stimuli. The nervous system not only acts, but it also reacts. It is the reaction that counts when a man is sick, and by suggestion we can heighten the resistive powers of the cells comprising the totality of the organism and augment the recovery of pneumonia patients. My success in the treatment of pneumonia has been in every way comparable with Major Russell's success with vaccine immunization for the prevention of typhoid. Nine of my twenty-two years in medicine were spent in general practice, and I had but a single death from pneumonia in patients above 2 years of age. This death occurred in a man of 68, who, following typhoid, had a pneumonia complicated by an enormous pleuritic effusion. I wish that other physicians would try out this method in the treatment of pneumonia and make a comparison of the results with those of vaccine treatment.

DR. W. E. SCOTT, Adel, Iowa: I should like to ask Major Russell whether the tincture of iodin that is used in sterilizing the skin is freshly prepared, or whether something is added to it to prevent the changes due to age. It is known that destructive effects on the skin sometimes result from the use of old tincture of iodin, but I do not know how soon this change takes place.

DR. HENRY HANSEN, Jacksonville, Fla.: I should like to ask Dr. Cole how he determines whether or not a patient will react with anaphylactic shock, how much serum is injected in order to determine that and also what time he has given for the symptoms to appear.

DR. L. A. KNOPF, New York: I should like to ask Dr. Russell if he has any suggestion to make as to how he can stop certain enterprises which claim to cure tuberculosis by atoxic living bacilli.

DR. VAN G. YAEGER, Hayward, Wis.: I should like to ask Major Russell why there is not more agitation for muzzling dogs to prevent rabies.

DR. D. A. HERRON, Comfrey, Minn.: I have read that one Dr. Allen, a former associate of Wright of London, recommends strongly the use of a standard vaccine, that is, a simple vaccine of pneumococci, in lobar pneumonia. Has Dr. Cole any opinion on the use of simple vaccines of pneumococci?

DR. RUFUS I. COLE, New York: We have made no extended test of the medical treatment outlined by Dr. Munro.

In order to determine whether or not the patient is sensitive to serum, we have, in every case, immediately on admission to the hospital, injected 2 c.c. of horse-serum and then continued our treatment as soon as we could determine the nature of the organism concerned. Possibly 2 c.c. is too large a dose. It may be thought better to use a much smaller amount. I know of diphtheria patients who have shown marked symptoms following the injection of 2 c.c. of serum. This will be a problem to be taken up later when we give the method of treatment wider application.

I have had no experience with the vaccine treatment of pneumonia.

MAJOR FREDERICK F. RUSSELL, Washington, D. C.: We have been unable to cure carriers with any vaccine which we have made. In regard to the treatment of typhoid patients by vaccine, we have had, for reasons which are evident, little material. Men I know have used typhoid vaccine in the treatment of cases, and some of them are quite optimistic; others are not. I myself have had almost no experience; what little I have had has been encouraging. The iodin used on the skin is the ordinary 7 per cent. tincture of iodin. Some use a 50 per cent. solution; others full strength; it is simply painted on the skin. We have never felt that prophylactic vaccination in the first stage of typhoid has done the typhoid patient any harm. We vaccinate a great many children; the dose is determined by weighing the child. The dose for an adult is based on an average of 150 pounds; if a child weighs 50 pounds, we give it a third; if the fraction does not come out conveniently, we increase rather than diminish the dose. Children do not react so strongly as adults; in fact, it seems to be a rule that the younger the person, the less the reaction.

Syphilis, "G.P.I.," and Tabes.—Another curious fact in favor of the syphilitic origin of tabes is, as was shown by Krafft-Ebing, that general paralytics are insusceptible to inoculation with the syphilitic virus. I do not know if the same has been proved in respect to tabes, but probably the result would be the same.—George Pernet, in *Clin. Jour.*, vol. 35, p. 374.

CHRONIC ARTHRITIS *

LEONARD W. ELY, M.D.
DENVER

In announcing a series of articles on diseases of bones and joints the editor of one of our medical journals said recently that they would set forth "certain surgical methods quite different from those generally accepted." Therein he was in error, as no "generally accepted" surgical methods exist. The treatment seems largely a matter of temperament and environment. Especially is this true of chronic joint disease, and it will remain true so long as we depend for our inspiration on clinical experience. Clinical experience always has failed us in advancing our knowledge, and it will fail us here. We have still much to learn, but we are picking our way slowly through the tangle. At present chronic arthritis falls to a great extent in the domain of the orthopedic surgeon, but the deeper I go into the subject, the more I am convinced that chronic arthritis must finally be handled by the internist. Some of the reasons for my belief will appear from what follows.

What I set forth is based on the laboratory study of about 120 specimens, as well as on clinical study.

CLASSIFICATION

All cases of chronic arthritis can be divided into two great classes or types. The second type includes such lesions as Heberden's nodes and morbus coxae senilis, and, on account of lack of time, will not be discussed here. The other type includes by far the greater number of all cases of chronic joint disease. Its chief characteristic is a proliferative inflammation of the synovial membrane or of the lymphoid marrow or of both.[1] Depending entirely on the intensity and extent of this inflammation the bone and cartilage atrophy and disappear.

Mark well that the changes in the bone and cartilage are simply the result of the changes in the marrow and synovia.[2] There is nothing active about them.

PATHOLOGY

The changes in the synovia can be observed more easily than can those in the marrow. If the membrane be irritated, mechanically or otherwise, it undergoes a thickening and a villous proliferation. Its reaction is much the same, no matter what the nature of the irritant. Thus, if an inflamed joint be opened, the picture that presents is the same, whether the cause of the inflammation be syphilis, gonorrhea, typhoid, repeated mechanical injuries or a hemorrhage. Indeed, the gross changes wrought by tuberculosis are also the same, and we can only make the differentiation by demonstrating the tubercle. Further, the same morbid changes appear in the progressive multiarticular form of arthritis—the so-called "rheumatoid" arthritis,[3] Goldthwait's atrophic and infectious arthritis,[4] Nathan's metabolic arthritis,[5] Nichols and Richardson's proliferative form,[6] etc.

Let us turn now to the lymphoid marrow in the bone-ends. The characteristic change in the type under discussion is a chronic proliferative inflammation, which eats away the bone and cartilage, and, if severe enough, destroys the nutrition of both. The morbid process can reach the joint in one of two ways, by perforating the articular cartilage, or by entering the joint at its margin. The disease may exist indefinitely in the marrow, and possibly may never invade the joint cavity at all. In such case cultures from the joint would be negative.

The skiagram in all such cases, no matter what their cause, would show the same results, namely, a thinning and erosion of the cartilage, or its disappearance, and a rarefaction of the bone, possibly its partial destruction.

Pathologic identity implies identity of symptoms and of physical signs. In spite of all the clinical work that has been done on these joints, the various diseases which compose this type of arthritis cannot be differentiated from one another by their joint manifestations. If the patient were covered with a sheet, exposing the affected joint only, and if a history were denied us, we could not make a diagnosis as to the causal disease, even if an excellent skiagram were furnished for our inspection. In other words, as long as there is no sinus formation, the clinical picture may be the same in syphilitic, gonorrheal, typhoid, tuberculous, traumatic and hemorrhagic arthritis, and of that multiarticular progressive form which has passed hitherto under so many different names.

We have therefore, at least in the gross manifestations, pathologic identity, and identity of symptoms and of physical signs. How then can we make the diagnosis? Unless we can demonstrate the offending organism, only by considering circumstances outside the joint, and by weighing probabilities.

ETIOLOGY

We know that recurring trauma can produce the changes described, or some of them, and that the gonococcus, the *Spirochaeta pallida*, the tubercle bacillus and certain other germs can do the same. There remains that great group whose cause has never been absolutely demonstrated, although various observers have recovered pure cultures of cocci from the inflamed joints, and some have produced the disease by injection of these cultures into animals.[7] Shall we regard this group as "metabolic," or shall we believe that, after the manner of every non-traumatic chronic joint disease whose cause we have discovered, these cases also are due to micro-organisms?[8] Clinical evidence supports laboratory findings. Those who have searched diligently for a possible source of infection have often found it, and, removing it, have cured the patient.[9]

With clinical and pathologic evidence to support us then, we may adopt the working hypothesis that every non-traumatic chronic arthritis, like every non-traumatic acute arthritis, is due to an infection of the lymphoid marrow or of the synovia, or both.

SYMPTOMATOLOGY

The symptomatology of this type is comparatively simple in its essentials. The joint is usually swollen, and more or less painful and limited in its motion. Muscular atrophy may or may not be present. The joint may contain fluid or it may be a mass of fibrous adhesions. Constitutional symptoms, fever, etc., may be pres-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

1. The inner layer of the periosteum is regarded as being so much marrow, both in its function and in its reaction to disease.
2. For a description of the morbid changes in arthritis see Ely, Am. Jour. Surg., 1912, March, et seq.
3. Llewellyn, Jones: Arthritis Deformans, William Wood & Co., 1909.
4. Goldthwait, Painter and Osgood: Diseases of the Bones and Joints, D. C. Heath & Co., 1909.
5. Nathan, Philip W.: A New and Apparently Successful Method of Treating Metabolic Osteo-Arthritis, THE JOURNAL A. M. A., June 17, 1911, p. 1779.
6. Nichols and Richardson: Jour. Med. Research, xxi, No. 2.
7. Fayerweather: Am. Jour. Med. Sciences, 1905, cxxx, 105; Schüller; Berl. klin. Wchnschr., 1893, xxx, 865; Poynton and Paine: Lancet, London, 1900, ii, 861, 932 and 1910, i, 1524.
8. Adami defines health as metabolic equilibrium. Disease, then, is disturbed metabolism. Hence to say that an arthritis is due to disturbed metabolism is to say that it is due to disease.
9. Billings, Frank: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, Arch. Int. Med., April, 1912, p. 484

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ent or absent. Secondary infection may occur with any member of the group except the peculiar "cryptogenic form." A marked uniarticular nature is characteristic of some; a multiarticular of others. Certain others are sometimes uniarticular, sometimes multiarticular. There is no one symptom or group of symptoms peculiar to any member of the group, nothing that can be used to distinguish it from its fellows. The only way of making a positive diagnosis is by the demonstration of the causal organism or, in the case of tuberculosis, of the tubercle.

TREATMENT

If our hypothesis is correct, that every non-traumatic case in this type is infectious in its nature, the main indication for treatment is manifestly to find the focus of infection if we can, and to remove it. Local treatment occupies an entirely subordinate position except in tuberculosis. In tuberculosis local treatment is practically all we have to offer, always with the addition of general constitutional measures.

Chronic syphilitic arthritis, contrary to the teaching of most text-books, is by no means rare. Sometimes, when we are absolutely unable to find any definite source of infection, a course of anti-syphilitic treatment is advisable, on general principles. In my hands the iodids have proved of less service than mercury and salvarsan. Strangely enough immobilization seems absolutely useless in a syphilitic joint.

For a chronic gonorrheal arthritis the main indication is to set the genito-urinary tract in order. Until this be done all local treatment is simply palliative.

The progressive, multiarticular form has presented until recently a practically unsolvable problem, but the outlook now is by no means hopeless. He who writes off a prescription on the spur of the moment, or tries the latest panacea for joint diseases will continue to bemoan his results. Everyone of these cases furnishes a field for patient study, and the more thorough the study is, the more frequently a focus of infection will be found in some other lymphoid tissue of the body—a diseased tonsil, appendix, lymph-follicle or lymph-node. A suppurating tooth socket, nasal sinus or ear may be responsible, or a chronic intestinal infection, according to some authorities. In the last case we are on somewhat uncertain ground. Syphilis is almost certainly responsible for some cases. The tonsils should be removed as a routine measure, even when nothing points to their disease.

SUMMARY

The points which I wish to emphasize are: All the members of one great type of the chronic arthritides have a common symptomatology and practically a common pathology. With the exception of the traumatic cases, those whose nature is known are infectious in their origin. Those whose exact nature is still unknown are almost certainly infectious in their origin also. The treatment usually consists in removing the infection.

520 Metropolitan Building.

ABSTRACT OF DISCUSSION

DR. RICHARD C. CABOT, Boston: I want to ask Dr. Ely whether he has seen cures in any of these multiarticular cases of unknown origin by the removal of the focus of infection. We have for years been told to find these foci of infection, and many of us have tried to find them; often we do find them, but I have yet to see any cases improved.

DR. VAN G. YEAGER, Hayward, Wis.: Dr. Ely recommended the removal of tonsils whether they were diseased or not. It has been said that rheumatic infections especially enter the body by way of the tonsils, but it has not been proved. Probably the tonsils filter out rheumatic organisms. If we remove the tonsils we simply remove the filter.

DR. JOSEPH L. MILLER, Chicago: Dr. Ely is touching directly on the etiology of these cases when he takes the stand that focal infections are responsible for practically all of these chronic joint infections. I believe that time will show that he is correct. I certainly have seen cases of chronic joint infections where the trouble has disappeared just as much as one could expect it to disappear from a joint in which there were more or less permanent anatomic changes. The stand he takes in regard to the appearance of the tonsil is of importance. A tonsil may appear to be perfectly normal; the patient may state that he has not had an attack of tonsillitis since childhood; still, when such a tonsil is enucleated, there may be found at its base an abscess, and cultures made from that abscess will show the presence of hemolytic streptococci. An injection of these cultures into rabbits will produce chronic arthritis. It has been my experience with many of those patients that after the removal of the tonsil the joint trouble disappears.

DR. COLLINS JOHNSON, Grand Rapids, Mich.: May I ask Dr. Miller to tell us in what way the use of Phylacogen helped some of these chronic cases? A woman from Grand Rapids, after being treated unsuccessfully by a number of men in Grand Rapids, finally consulted Dr. Miller. She told me that he administered Phylacogen and sent her home well. I wish Dr. Miller would explain that.

DR. JOSEPH L. MILLER, Chicago: This lady to whom the doctor refers had an attack of tonsillitis in November. I saw her in June. She had had the tonsils enucleated immediately after that. She had arthritis in one hip; it continued. She had been treated by somebody at Johns Hopkins with vaccines. She was no better. She came to me with this story. I may say right here that when the Phylacogens were introduced, Dr. Schaefer used them in the County Hospital in a large number of acute infections, and I have seen results from Phylacogen in acute articular rheumatism which, I believe, have not deceived me. I am not advocating the way in which the Phylacogens have been promoted, nor am I supporting them at this time. I stated to this lady that she had had everything done for her rheumatism that I knew of, except the taking of Phylacogen, and that if she wanted to take them, I was willing to administer them to her. She said she was willing to take anything to get well. She took the Phylacogens, and as far as I know, she is well.

DR. L. W. ELY, Denver: I have seen these joints cured by removing the source of infection. Do not understand me as saying that the tonsil is responsible for these joint infections in every case. There is no panacea for joint infections—no one organ that is responsible for all cases. One must examine the patient from head to foot, and then must try to decide on the guilty organ. In the present state of our knowledge it is a case of weighing probabilities. If one guesses the tonsil, one will strike it more often than in any other organ. I cannot answer the question as to how one knows that a tonsil is diseased; it is impossible to tell until the tonsil is removed; in fact, even then one cannot always tell.

I cannot speak about the filter action of the tonsil, because we know very little about that. We do not know what the function of the tonsil is as yet. But I do know, and I have proved it in my practice to a limited extent, that when the lymphoid tissue in the joint is infected, the infection usually comes from some other lymphoid tissue in the body. The work is based primarily on pathology, and clinical results confirm laboratory findings. You cannot cure your patients' joint absolutely, even when you take out the focus of infection, *if the joint tissues are destroyed.* If the cartilage is gone, the joint will never be movable again without an operation; but as to checking the disease, and, in the early cases, curing it by the removal of the infection, I know that it can be done, for I have done it.

HEMORRHAGE FROM THE NON-PREGNANT UTERUS *

JOHN B. DEAVER, M.D.
PHILADELPHIA

Even a casual glance over recent literature indicates that the subject of uterine hemorrhage is so complex as to make practically impossible a comprehensive classification of causes. At the same time, the subject is simple enough to be readily understood. Such confusion indicates ignorance of the underlying principles of menstruation—its anomalies and abnormalities. Without accurate knowledge of the regular menstrual function, attempts to treat departures from the normal must depend almost entirely on empiric rules, the result of experience in practice. Such clinical experience, in the treatment of the various forms of uterine hemorrhage, I may claim without unduly violating the canons of modesty. It is on the result of this experience that I wish to speak.

In practice one meets hemorrhage from the non-pregnant uterus during the three important epochs of a woman's life—puberty, the child-bearing period and the menopause. Whatever the time of life at which such bleeding occurs, it may be said to depend on either local or constitutional causes.

Under constitutional causes we may at present include those little understood forms of hemorrhage supposedly due to interference with or departure from the normal in the internal secretion or secretions of the ovary and other ductless glands. Such abnormality may be presumably in the quality, quantity or regularity of the secretion, but the bearing on treatment has not yet been determined.

Other better understood causes are chronic visceral diseases (heart, lung, liver and kidney), infectious fevers, syphilis, general arterial sclerosis with high blood-pressure, leukemia, hemophilia and essential anemias, including chlorosis.

In any given case of uterine hemorrhage without easily demonstrable local cause, these various factors should be ruled out before one resorts to the ubiquitous and overworked curet. Curettage in these cases is of no permanent value, although it may lessen temporarily the menorrhagia and metrorrhagia. Such improvement is, however, always transitory. It may be interesting to mention that Whitehouse reports 20 per cent. of failures in a large number of patients submitted to curettage, indicating that one woman in five has been subjected to operation unnecessarily—a strong indication against the prevalent methods in diagnosis and treatment of uterine abnormalities.

Treatment in cases of menstrual anomalies of constitutional origin resolves itself into treatment of the underlying causes. Menorrhagia and metrorrhagia are only two of the many local indications of a general condition which requires the adoption of proper hygienic and therapeutic measures for its relief or cure. The local symptoms require local treatment in very few cases.

There are certain cases, however, without demonstrable local or constitutional causes, which, for want of a better term, are usually considered cases of endometritis. Curettage cures them and the scrapings show the well-known appearance of hyperplasia and hypertrophy of the endometrium and its glands. It is very probable that a certain number of these cases arise as the result of a mild superficial infection, and this is especially to be considered if the patient also has leukorrhea.

Every method of diagnosis should be exhausted, including bacteriologic examination of the uterine cavity, before a patient is relegated to the class of those suffering with "simple endometritis"; and, for reasons to be considered later, girls during adolescence are never included in this class.

Local causes of uterine hemorrhage include practically every form of disease which may occur in the pelvis; infections of the uterus from gonorrhea or after puerperal sepsis, myoma, polyp and cancer, tears of the cervix, retrodisplacements, tubal, broad ligament, tubo-ovarian and ovarian disease. In this connection it must be remembered that bilateral ovarian tumors, particularly carcinoma, frequently cause amenorrhea as a result of complete destruction of ovarian tissue. Constipation is included among the local causes for the reason that it produces uterine congestion by mechanical obstruction to free venous flow from the pelvis.

Whether both local and constitutional causes produce hemorrhage by setting up a so-called endometritis or by their action on the vasomotor or muscular mechanism of the uterus, I am unable to say. Such hypertrophy and hyperplasia of the endometrium is almost always demonstrable in these cases, but it is also often present when there is no menstrual abnormality, and occasionally, in spite of the fact that there is free bleeding, atrophic instead of hypertrophic changes occur.

Whenever there is a demonstrable local cause for hemorrhage, such as lacerations, displacements, tumors, etc., treatment is simple and easily determined on. Indications for operation are obvious and the extent of the operation is determined by the amount of disease. In all cases in which the uterus is not to be removed, curettage should always be performed, as this hastens the return to normal. These easily recognized and treated forms of hemorrhage occur with greatest frequency during the child-bearing period and a large number of them are a direct result of parturition.

Puberty and the menopause furnish us with the most difficult and puzzling forms of hemorrhage and the ones which are at the same time the most resistant to treatment.

The onset of the menstrual cycle is a critical period in a girl's life, when her nervous and bodily functions are readily and perhaps permanently unbalanced. The greatest care is necessary in the treatment of any abnormalities of sexual organs, as nervous shocks of any kind are likely to develop a morbid mental attitude toward the menstrual and sexual life. Pelvic examinations and local treatment can and should be avoided in all but the most exceptional cases. This applies even to patients who have been anesthetized. It is a question if anesthesia is advisable, because the preanesthetic and postanesthetic periods are usually associated with the rapid development of fanciful ideas which may have a lasting effect on the sensitive mental organism of the adolescent. Delay in resorting to examination and explanation by the patient's mother of the object of the examination, with a minimum of manipulation at the time, are better safeguards than anesthesia in all but exceptional cases. Rectal examination may sometimes be substituted for vaginal.

Hemorrhage at puberty, the so-called virginal menorrhagia and metrorrhagia, may of course depend on

* Read in the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913

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a local cause, such as infection, ovarian disease, etc., but such cases are comparatively rare. The majority are cases of "essential" hemorrhage.

The causes of these essential hemorrhages are numerous and varied. Sufficient mention has already been made of the common constitutional causes, although mitral stenosis probably deserves special mention. Hemophilia, which, contrary to general belief, is not uncommon in a mild form among women, may manifest itself by uterine hemorrhage at puberty; I have seen this prove fatal. So, too, chlorosis and congenital syphilis may cause irregularities at the onset of menstruation.

A factor in menstrual hemorrhage that is worthy of more consideration than it receives at present is the estimation of the calcium index. There is undoubtedly a close connection between the calcium metabolism and menstruation (Blair, Bell). Hyperthyroidism is another cause of increased and irregular bleeding at puberty.

Anomalies of ovarian function in regard to its internal secretion are frequently accused of causing menstrual irregularities in early life. Dalche's explanation is that rapid growth of the body and sudden development and maturation of the ovary unsettles the normal equilibrium and causes a condition of "ovarian ataxia" in which periods of hyperfunction alternate with periods of functional inactivity. This form of "ovarian" hemorrhage is not to be confused with that due to macroscopic disease of the ovaries.

It is apparent that there are two distinct sides to the treatment of uterine hemorrhage at puberty; one the treatment of cause and the other treatment of the acute condition, as at times bleeding is so free that the patient's health is markedly affected.

Treatment of the underlying cause varies in the individual case. No definite rules can be determined on. Girls with a low calcium index should receive from 10 to 20 grains of calcium lactate three times a day. This is the only drug that can be said to have a definite indication, although the list of drugs used is of formidable size, some being administered with the idea of overcoming the underlying cause, others to stop the hemorrhage. Among these may be mentioned ovarian, adrenal, thyroid and pituitary extracts, animal serum, ergotin, hydrastin, stypticin, etc.

The starting place in the treatment of these cases of "essential" uterine hemorrhage is the axiom that such a case should never be curetted. The most essential part of the immediate treatment is rest in bed. Nothing tends to control hemorrhage so effectually. Many men order in addition hot vaginal douches. This is justifiable in married women, but, like all other forms of local treatment, should be avoided in unmarried girls. If it is desired to have the local effect of heat it is best obtained by hot rectal injections, and it is questionable if even these are advisable, as the application of an ice-bag to the abdomen is much more efficacious.

In this connection I should like to state my conviction that routine vaginal douches do more harm than good in most instances. They are one of the many forms of local treatment that increase the number of women suffering from the various sexual psychoneuroses. Many women, married and unmarried, can trace the development of sexual types of mental abnormalities to well-meant but injudicious local treatment. Women doctors are marked offenders in this direction with frequent, unnecessary vaginal examinations, weekly changes of pessaries, and the routine prescription of self-administered vaginal douches. Digital massage of the uterus is a favorite treatment of some osteopaths, with what disastrous results can readily be imagined.

The use of x-rays, which might be expected to have some influence on these cases of hemorrhage, is contraindicated because of their destructive effect on the ovaries. In hyperthyroidism ligation of the vessels or excision of part of the gland might be expected to result beneficially, and that they do not is probably because the symptoms are due more to disordered than excessive secretion. There is a strong reaction against thyroid operations in early life, at least until prolonged and intelligent attempts have been made to control symptoms by hygienic treatment. Gelatin given subcutaneously or by mouth has been recommended. Its use by the former method is dangerous from the standpoint of sepsis, and the latter method is uncertain, although it is said to increase the coagulability of the blood. Electricity is objectionable because it is a form of local treatment.

It seems that we are reduced, therefore, to the effects of rest, quiet, free action of the bowels, ice, calcium, or other drugs as they seem to be indicated; and, above all, the beneficial effects of time, for improvement or cure of these obstinate cases of uterine hemorrhage at puberty.

Again let me sound a warning against curettage and other forms of local treatment. They not only do no good but are distinctly harmful, and are the basis of many of the psychoneuroses that our friends the psychiatrists are revealing to us out of the old order of surgical neurasthenia.

Hemorrhage at the menopause presents problems of a different nature. Irregular and excessive bleeding at this time puts on the attending physician the burden of proving the absence of carcinoma of the cervix or body. For this reason curettage is indicated—in fact, it is imperative—in every case of this description, as it is by this means only that carcinoma of the body can be ruled out. Inspection and section for microscopic examination suffice for the diagnosis of cancer of the cervix.

The treatment of these forms of hemorrhage consists in as complete a panhysterectomy as possible. But these are not the cases that cause trouble and anxiety in diagnosis and treatment. There is a class in which physical examination shows little or no abnormality in the uterus and its appendages; curettage reveals a normal endometrium or a moderate amount of simple endometritis, yet the bleeding continues and becomes more instead of less frequent and severe. These are the cases that have caused the adoption of numerous methods of treatment, all aiming to avoid the necessity for hysterectomy.

The cause usually given for the hemorrhage is sclerosis of the uterine vessels, distinct from and not to be confused with a general arteriosclerosis. The greatest change is in the adventitia and media. The adventitia is greatly increased by the deposit of fibrous tissue, which also involves the surrounding tissue, giving rise to a peri-arteritis. The media is diminished in size because the muscle is replaced by fibrous tissue. The intima is not involved and the lumen of the vessel not encroached on, a differential point from syphilitic atheroma.

This sclerosis may exist independently or be associated with more or less intermuscular fibrosis, which may go to the length of supplanting a certain amount of muscular tissue. These variations in the pathology

probably account for the difference in the physical signs in individual cases. In some the uterus is small and apparently normal to examination, in others it is large and soft, and in still others it is large and very firm. The sclerosis of the vessels is common to all three forms and is believed to be the offending agent in the causation of hemorrhage. Simpson believes that the condition of the myometrium plays a greater rôle in the regulation and prevention of hemorrhage from the uterus than the vessels. The sclerosis observed in these cases could readily so interfere with the tonic contraction of the uterine muscle as to prevent occlusion of the vessels by muscular action and thus permit excessive loss of blood.

The various means that have been employed to overcome bleeding of this description have as their object preservation of the uterus and the maintenance of the normal menstrual flow. This is of course an advantage in younger women, in whom this condition is said to occur with greater frequency than at first supposed.

Curettage is always the first step in the treatment of these cases, to enable one to exclude carcinoma. On this point every operator is agreed. Subsequent treatment marks the particular predisposition of the individual surgeon.

To mention non-operative methods first, the x-ray and electricity are the most prominent contenders for popular favor. Several observers have had varying degrees of success in controlling hemorrhage by the use of x-rays. They act by causing atrophy of the ovaries and subsequent atrophy of the whole genital tract, including the uterus. For cases in which operation is refused or contra-indicated there is no doubt that the x-rays offer a fairly satisfactory method of treatment, but in my experience one not always to be relied on. There is a fairly large percentage of failures and thus valuable time may be lost. On account of their effect on the ovaries, the x-rays cannot be used on young women.

Electrical treatment has various advocates (particularly Hirst). I have had no experience with it except in meeting cases that have relapsed after a more or less prolonged period of freedom from symptoms after a course of electrical treatment. I have never been able to persuade myself that there is any field for such treatment.

Atmocausis, the application of live steam to the uterine cavity, has occasional advocates in various parts of the world, who are all positive in their statements that good results can be obtained by its use, particularly in cases that occur during the child-bearing period, when radical treatment is to be avoided if possible. In these cases the endometrium is cooked, but not sufficiently to cause subsequent sloughing. At times destructive atmocausis is undertaken with the view of causing complete occlusion of the uterine cavity by sloughing and subsequent adhesion.

The action of the steam is difficult to regulate to just the required degree and the prevention of infection is almost impossible. I myself have no faith in the ability to cure by atmocausis any but the very mildest cases of hemorrhage and feel sure that any field of usefulness it has is extremely limited. I never use it.

Of other forms of treatment, hot air, vibratory massage, active and passive hyperemia, zinc injections and animal serums I have had no experience. It would be impossible for any one man to try all the methods that have been advocated, and each operator must work out for himself his own views

Occasionally one of these patients bleeds so freely that immediate local treatment is necessary. Plugging the uterine cavity and vagina with gauze will always stop the bleeding, but should be done only when asepsis is sure. Under other circumstances a vaginal plug, firmly pushed home into the vaginal fornices, is safer and practically as certain of stopping hemorrhage.

Most of the obstinate cases of uterine hemorrhage that fall into my hands have been the rounds of various "specialists," who have put them through all the different recognized and unrecognized forms of local, general and absent treatment. These patients come to me with a vigorously expressed desire for cure, having been thoroughly disgusted by the time and money they have wasted without getting relief.

Naturally these represent the failures of other treatments, and it may be that my experience has made me too skeptical of the value of forms of treatment other than operative, as I never encounter the successes of the conservative methods.

I believe that in a well-marked case of uterine hemorrhage due to sclerosis of the vessels, complete removal of the uterus is the only sane treatment.

I wish particularly to direct attention to the advantages of a preliminary hysterotomy in certain cases. I advocated a year ago in this Section hysterotomy as the operation of choice in placenta praevia; in occasional neglected cases of the toxemia of pregnancy and in certain cases of menorrhagia and metrorrhagia in which carcinoma and gross disease of the uterus appeared not to be a factor. By thus opening the uterus I have on several occasions disclosed a non-malignant polypoid condition of the endometrium which could be much more thoroughly treated under direct inspection than by blindly curetting from below through the os. Occasionally, also, one or more fibroid nodules may be discovered beneath the endometrium and removed with ease. The usual method of curetting could hardly be successful in the removal of these small submucous myomas. I have had no mortality from hysterotomy and believe it to be an operation deserving of wider application. Practically the only danger of any moment is that of infection of the abdominal cavity. If the uterus and the field of operation be well walled off with gauze pads this danger may be minimized, even in the presence of an infected uterine cavity. It must be remembered that the operation of hysterotomy, partial or complete, is not free from the dangers of infection. Still, I would not venture hysterotomy in the case of a boggy uterus evidently the seat of metritis. This condition is rare, however, and it is my belief that the risk of infection following hysterotomy is greatly magnified by the objectors to the operation. Having had great satisfaction from the operation in selected cases, I do not hesitate to employ it and to recommend it to experienced surgeons.

The question of the desirability of complete hysterectomy is settled by the patient's age, degree of uterine disease and the chances of the subsequent development of carcinoma. In women of 40 or over I never hesitate to do the complete operation, as the uterus is of no actual use to most women of this age. I remove the ovaries at the same time, as they may be the cause of symptoms, and, while they cannot cause hemorrhage after the removal of the uterus, they are still a potential menace to subsequent good health by their tendency to tumor formation and the possibility of the perversion of their internal secretion. Occasionally in operating for a supposed uterine cause of hem-

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orrhage one finds an ovarian hematoma or hemorrhage into a lutein cyst, which is probably the fundamental cause of the hemorrhage. I do supravaginal hysterectomy and appendectomy in these cases.

SUMMARY OF CASES STUDIED

The total number of cases studied was 227.

Sixty-nine cases of fibromyoma uteri and 2 cases of carcinoma uteri which never presented symptoms of menorrhagia or metrorrhagia.

Forty-five cases, pathologic diagnosis of endometritis. Operations performed: complete hysterectomy in 5 cases (past menopause); anterior hysterotomy and curettage in 1 case; vaginal hysterectomy in 2 cases; dilatation and curettage in 37 cases.

Twenty-one cases, pathologic diagnosis of fibromyoma with endometritis. Operations performed: supravaginal hysterectomy in 17 cases; complete hysterectomy in 3 cases; vaginal hysterectomy in 1 case.

Twenty-four cases, pathologic diagnosis of carcinoma. Operations performed: complete hysterectomy in 12 cases; supravaginal hysterectomy in 4 cases; dilatation, curettage and cauterization in 1 case; dilatation and curettage in 1 case; cauterization in 1 case; vaginal hysterectomy in 1 case; 4 cases inoperable.

Forty-four cases, pathologic diagnosis fibromyoma. Operations performed: supravaginal hysterectomy in 31 cases; complete hysterectomy in 7 cases; anterior hysterotomy in 2 cases; myomectomy in 3 cases; vaginal hysterectomy in 1 case.

Two cases, pathologic diagnosis sarcomatous degeneration of fibroid uteri, supravaginal hysterectomy being performed in both cases.

Mortality.—Four deaths, all occurring in cases of carcinoma. In one carcinoma also involved the sigmoid and the patient developed fecal fistula; one patient died of uremia and two of toxemia.

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ABSTRACT OF DISCUSSION

DR. LEWIS S. MCMURTRY, Louisville: A point on which I would differ from Dr. Deaver is regarding anesthesia of virgins for examination of the uterus. It is practically impossible to make a satisfactory examination without anesthetizing the patient. She is unable to control the voluntary muscles and the resistance is such that examination is impossible. I would emphasize Dr. Deaver's statement that hysterotomy should be a means for diagnosis only in the hands of experienced surgeons. In the hands of men accustomed to opening the abdomen every day it is a safe procedure, and in many cases it is justifiable. As a routine procedure it would be a very dangerous practice. All of us who have operated for fibroma have opened the uterus to find that all the hemorrhage was caused by a small polyp in the fundus and that hysterotomy would have reached it. Hysterotomy as an exploratory operation for cancer of the uterus is seldom necessary.

Dr. Deaver rendered special service in calling attention to two salient points: (1) that this symptom should be dealt with as a symptom; (2) that there should be a thorough investigation made of every woman who has a persistent uterine hemorrhage to find the pathology and deal with it in a surgical way. I would especially commend the suggestion which Dr. Deaver makes as to young women at puberty, who have persistent hemorrhage without demonstrable lesion of the uterus or its appendages. Rest and general systemic treatment should be observed rather than resort to indiscriminate dilatation and curettage and other active surgical treatment. In conclusion, it is necessary to reiterate the oft-repeated warning as to the vicious practice of resorting to the curet indiscriminately for uterine hemorrhage. Curettage is more abused to-day than any other surgical operation and does more harm.

CLINICAL NOTES ON PATIENTS FROM THE MIDDLE NORTHWEST INFECTED WITH ENTAMEBAS *

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In 1911, Sistrunk[1] published our earlier experience at the Mayo Clinic with regard to the finding of intestinal parasites in individuals residing in the middle Northwest. Since then the examination of the stools in certain cases has led so frequently to the identification of entamebas that we have come to consider this infection as a relatively common one. In the diagnosis of the different types of amebas present, Craig's[2] description of the morphologic characteristics has been followed in our laboratories by Sistrunk and Sanford. Moreover, the recent work of Darling[3] and Craig[4] on the identity of *Entamoeba tetragena* with *Entamoeba histolytica* inclines us to prefer to group cases in which a morphologic diagnosis of either one of these parasites was made as *Entamoeba histolytica*. In this review, however, the former distinctions between *tetragena* and *histolytica* are maintained because of any interest that may remain in connection with the morphologic type of those amebas found in the Northern states.

During the last two and one-half years the stools of 1,700 patients have been examined for parasites. Entamebas have been found in 227 of these, or 13 per cent. Of this number, 148 were diagnosticated as *Entamoeba coli* and 79 as *Entamoeba tetragena* or *Entamoeba histolytica*. These totals include patients from all parts of the country who have been under our observation. This consideration, however, will be confined entirely to those with residence in Minnesota, Iowa, Wisconsin, North and South Dakota, Montana and Nebraska, whose infection, as nearly as can be judged, was not obtained in the South. Most of these patients had never been in the South. A few had traveled in the South but their visit seemed to have no relation to the onset of their symptoms. The first part of this paper is concerned with a consideration of those cases in which *Entamoeba tetragena* and *Entamoeba histolytica* were present; the latter part with a consideration of the cases showing *Entamoeba coli*.

CASES IN WHICH ENTAMOEBA TETRAGENA OR ENTAMOEBA HISTOLYTICA WAS FOUND

Of the seventy-nine patients showing *Entamoeba tetragena* and *Entamoeba histolytica*, forty-one, or a little less than one-half, evidently received their infection while residing in the before mentioned states and therefore constitute the most important group for our immediate consideration. Of this number, there were from Minnesota 14, Iowa 12, North Dakota 5, South Dakota 5, Nebraska 2, Wisconsin 2, and Montana 2.

Of the forty-one patients, thirty-six showed *Entamoeba tetragena* and only six *Entamoeba histolytica* (one of these, a patient with very severe symptoms,

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. Sistrunk, W. E.: Intestinal Parasites Found in Individuals Residing in the Northwest, THE JOURNAL A. M. A., Nov. 4, 1911, pp. 1507-9.

2. Craig: The Parasitic Amebas of Man, Ed. 1, 1911, Phila.

3. Darling, S. T.: Budding and Other Changes Described by Schaudinn for Entamoeba Histolytica, THE JOURNAL A. M. A., April 19, 1913, p. 1220.

4. Craig, Charles F.: The Identity of Entamoeba Histolytica and Entamoeba Tetragena, THE JOURNAL A. M. A., May 3, 1913, pp. 1353-4.

showed both *tetragena* and *histolytica*). It is therefore a prominent fact that the parasite of predominance conforms morphologically to the description of *Entamoeba tetragena*. In those cases showing *Entamoeba histolytica* the parasites were more numerous, though it is quite certain that these patients did not receive their infection in the South.

In a consideration of the clinical symptoms of these cases the original chief complaint of the patient becomes an interesting basis for classification.

Group 1. Patients complaining chiefly of diarrhea.—Twenty-four of the forty-one patients complained chiefly of diarrhea. Thirty-five patients of the forty-one, however, gave a history of diarrhea, although in some of these it was not their chief complaint. Thirteen had had, at one time or another, severe attacks of diarrhea with more or less blood in the stools. As nearly as can be judged, however, these attacks were not so violent as those in cases reported from the South. On the other hand, most of our patients gave a history of more or less constant diarrhea of a mild type, also quite in contrast to the Southern cases. More than one-half the patients gave a history of the passage of macroscopic blood at one time or another in the course of their disease.

Group 2. Patients presenting themselves chiefly on account of abdominal pain.—A second group of cases consists of those patients who complained chiefly of abdominal pain, nine in number. It has been our custom to send patients complaining of indefinite abdominal symptoms for a stool examination and the finding of parasites in this group of cases is due to that routine. The findings, of course, may be accidental, although at least two patients of this group are well of their original complaint.

Three-fourths of the patients (thirty-two) gave abdominal pain as a minor complaint. Pain was not confined to the lower abdomen; ten of the number suffered from upper abdominal pain and six complained of pain in the right lower quadrant, suggesting the possibility of involvement of the cecum. Rectal pain was a prominent symptom in four patients.

Group 3. Those complaining of indefinite gastric symptoms.—Patients complaining of indefinite gastric symptoms have often been referred for stool examination. Three patients in the series, who consulted a physician chiefly on account of gas and sour eructations, nausea and epigastric distress, have shown pathogenic entamebas. Complaint of this character, however, is not uncommon in the other cases. Fifteen of the forty-one patients gave a history of gastric symptoms, although they complained chiefly of abdominal pain or diarrhea. Nausea seems to be quite commonly associated with the more severe attacks, eleven of the series volunteering this information.

Group 4. Patients with constipation.—It is rather not to be expected that *Entamoeba tetragena* should be found in patients complaining chiefly of constipation and without diarrhea. In two instances of this character, however, amebas were easily demonstrated. Intermittent constipation, even in connection with those cases showing severe diarrhea, is not an uncommon finding.

Group 5. Miscellaneous cases.—In the remaining three cases dyspnea and weakness were given as the chief complaints and were the result of severe anemias. Two of these anemias were definitely of the pernicious type, while one was of doubtful nature and may have been entirely secondary. The finding of entamebas in cases of pernicious anemia can only be regarded as accidental.

Only one case of abscess of the liver has been observed among patients from the middle Northwest. In this instance *Entamoebae histolyticae* were demonstrated in the stools; the abscess, which was drained, was of typically amebic character. The patient resided in Duluth, had never been in the South and gave a six weeks' history of diarrhea with bloody stools. It is not certain that this patient received his infection in Minnesota. He had emigrated from Russia six months previously but his history had been of only six weeks' duration.

The duration of the history relative to the bowel symptoms for the entire group of forty-one patients varied from six weeks to twenty years. In six of the patients it was longer than ten years, in ten over five years, while in seventeen it was less than a year; the average was four years.

The eosinophil count was low. Three of the series showed no eosinophils on differential count; the average in twenty-one counts was only 2.5 per cent. In this connection it may be of interest to note that thirteen patients have been sent to the laboratory on account of a very high percentage of eosinophilia in order that a search for parasites might be made and in all of these instances the results were negative for entamebas.

Proctoscopic and sigmoidoscopic examinations were obtained in twenty-three of the forty-one patients. In sixteen they were negative, in three a diffuse colitis was demonstrated, in two a granular colitis and in two ulceration. Those cases showing ulceration and diffuse or granular colitis were all infected with *Entamoeba tetragena*. It should be remembered that a negative proctoscopic examination may not necessarily mean a negative colon, as the disease may be localized at one of the flexures or in the cecum. It is quite likely, however, that the large number of negative examinations is at least another indication of the mild character of these cases in comparison with the infections in the South. From the patient's point of view, however, they are severe enough to be a great inconvenience and detrimental to the general health.

The parasites were usually demonstrated at the first examination. In thirty-one instances amebas were found at the first examination, in nine two examinations were necessary and in one case three examinations. It is also evident, therefore, that the search for parasites should not to be abandoned too early. In the case in which three examinations were necessary for a demonstration of the parasites the patient had complained of intermittent attacks of diarrhea with bloody stools for four years.

CASES IN WHICH ENTAMOEBA COLI WAS DEMONSTRATED

As formerly stated, *Entamoeba coli* was reported in 148 patients. Of these, 106 were in patients residing in the middle Northwest. Fifty-nine, or over one-half of these patients consulted a physician chiefly because of diarrhea, while in sixty-nine or two-thirds of them diarrhea was given as one of the principal complaints. One showed granular colitis, eight diffuse colitis and four ulcerative colitis on proctoscopic examination. Of those presenting themselves chiefly on account of diarrhea, one-third gave a history of more than five years' duration, nine more than ten years and four more than twenty years. In many of them the diarrhea was severe in character. Thirty-eight or over one-third showed red blood-cells on microscopic stool examination, while sixteen gave a history of macroscopic blood. The parasites were usually found at the first examination. In only

seven of the 106 patients was a second stool examination necessary for the demonstration of the amebas.

We have no data on which to base a discussion of the possible pathogenicity of *Entamoeba coli* either positively or negatively, and present these facts only as statements of our findings.

The presence of *Entamoeba coli* in the more severe cases need indicate no etiologic relationship on the part of these organisms. And again it is quite likely that a further search for parasites would have demonstrated the presence of *histolytica* also in some instances; several of our more recent cases showed *Entamoeba coli* at the first examination and *Entamoeba histolytica*, as well as coli, subsequently.

TREATMENT

It has been very difficult to obtain an approximately accurate idea of the results of treatment in this series of cases. It has generally been necessary for the patient to return to his home where the treatment was carried out under the care of the family physician. Ipecac alone was used in 75 per cent. of the cases in which treatment seemed advisable. Ipecac was administered in conjunction with coal-oil enemas to eight patients. This does not take into account the treatment of those patients residing elsewhere than in the middle Northwest. Enemas of kerosene (Hanes[5]) alone were used under our observation in four instances in which *Entamoeba tetragena* or *Entamoeba histolytica* was present (one of these showed ulcerative colitis), and in all of them the results were excellent. It is our impression that coal-oil enemas should be given a trial in cases of entamebic infection in order that we may learn something more definite with regard to their efficacy. The administration of emetin hydrochlorid is considered by many observers of large experience to be almost specific in its action, and is especially indicated in severe types of infection (Rogers[6]).

It may be emphasized that amebas are generally demonstrated easily at the first examination if the patient be properly prepared and the stool properly obtained. Epsom salts may be given early in the morning and an hour or two later the patient reports at the laboratory where one or more stools may be examined while they are yet warm. It is a noticeable fact that the search may be difficult either in a stool that is too well formed or in one which is too watery.

It may be well to urge a more wide-spread interest in the examination of stools for parasites in the Northern states. Undoubtedly entamebic infection is a quite generally unrecognized cause of diarrhea, and probably of certain indefinite abdominal complaints. At the same time it should be remembered that the finding of parasites can be regarded only as a part of the evidence in the diagnosis of any condition of the bowel; there may be a tendency to ascribe a patient's complaints too quickly to this finding.

ABSTRACT OF DISCUSSION

DR. VAN G. YEAGER, Hayward, Wis.: I practiced formerly in Lake Charles, La. In that particular section of the country we have a great deal of amebic dysentery. I recall one case in which the patient passed, on an average, from fifteen to twenty stools in twenty-four hours. When he came to my office his stool consisted entirely of mucus and blood, and on examination I could find from five to ten amebas in the one-sixth field. If the patient is given a good dose of magnesium sulphate in the morning, without any breakfast, it will be possible to obtain a stool thin enough, in most instances, to demonstrate the ameba without difficulty.

In amebic infections in the early stage, there is probably always a marked eosinophilia, but when the infection has lasted sufficiently long to give marked symptoms the differential count is often of little value, for whatever the increase in eosinophils means, and it probably indicates a fight against poisons from intestinal infections with parasites, it surely approaches the normal as the system becomes accustomed to the poisons which produce it.

I have treated probably ten or fifteen severe cases of this kind. Ipecac gave satisfactory results in all. Dr. Simon in the Charity Hospital in New Orleans uses five-grain salol-coated pills, giving from 60 to 100 grains each night for a week. The salol coating is not dissolved in the stomach, but in the intestine where the effect of the ipecac is wanted, and thus the nauseating effect which would result from such enormous doses of ipecac in the stomach is avoided. To avoid the taking of much medicine some pharmaceutical houses have placed in the hands of physicians who are in positions to make careful observations a preparation of emetin which is given hypodermically with success. Most patients will be nauseated, aside from the ipecac, just from taking a great deal of medicine. By giving paraldehyd, which is one of our safest hypnotics, immediately after the ipecac, the patient will sleep until the ipecac has had time to be effective. I recall one patient who vomited frequently during the first few hours after taking ipecac. I advised him to take paraldehyd, which he did, sleeping soundly afterward for about six hours; he vomited immediately on awakening, however. This is a common experience.

DR. CHARLES L. MINOR, Asheville, N. C.: I wish to ask if the 100 grains are given in one dose, or in a number of doses during the twenty-four hours?

DR. VAN G. YEAGER, Hayward, Wis.: The 100 grains are given in one dose at night. This treatment is carried out for a week, the patient being given from 60 to 100 grains each night and being kept on a light diet and in bed. One advantage of a light diet is that the bowel is empty, and the ipecac comes in contact with the ameba.

DR. W. C. DIXON, Nashville, Tenn.: In the South we see many cases of amebic dysentery. I have used the ipecac treatment, giving large doses, but it is exceedingly unpleasant. I have not been so successful in avoiding the nausea as the doctor seems to have been in his cases. I have recently been able to secure emetin hydrochlorid and have obtained good results from its use. Previously, I used the emetin resinoid in solution. This is the most satisfactory treatment for dysentery with which I am familiar. The dosage of the hydrochlorid is one grain in twenty-four hours, given under the skin of the arm; the effect is almost magical in acute cases, or in chronic cases with much ulceration and many amebas in the stools. In the course of three or four days most of these cases clear up. It has been far more satisfactory than irrigation with quinin, coal-oil or any other agents that have been used. It is easy to give. The patients do not necessarily go to bed, although it is probably better if they are kept in bed and on a liquid diet. They are given one-fourth of a grain of the emetin one day, half a grain the next day, a grain the next day, and a grain each succeeding day. At the end of three or four days the stools are usually free from amebas and the patient makes an uninterrupted recovery.

The credit for this treatment is due to Dr. Rogers of Calcutta, India. He has had an extensive and satisfactory experience with it. He seems to have cured a number of patients with abscess of the liver by aspiration and injection of emetin into the cavity, together with the hypodermic administration of the emetin. I have had only one case of abscess of the liver in which I used emetin. The patient was in an extreme condition, the abscess was aspirated and one grain of emetin in solution was injected into the cavity. The patient showed some improvement for a few days, and then died rather suddenly. At necropsy it was found that he had two abscess cavities in the liver, the upper one having ruptured into the pleura, the lower one having been aspirated.

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5. Hanes, Granville S.: Amebic Dysentery, THE JOURNAL A. M. A., June 19, 1909, pp. 1990-2.
6. Rogers: Brit. Med. Jour., June 22, 1913, pp. 1424-5; ibid, Aug. 24, 1912, pp. 402-9.

DR. G. D. HEAD, Minneapolis: We have a form of chronic diarrhea in the North, occurring in persons who have never been in the South. It is due to some intestinal parasites of which Dr. Giffin has spoken. There is, however, a form of diarrhea of which I have seen many cases, in which one finds in the stools the *Trichomonas intestinalis*. This form of chronic diarrhea lasts for years and simulates quite closely the diarrhea due to *Amœba coli*. Tremendous numbers of these flagellates are often found in the stools. They are recognized immediately with a one-sixth objective. If the flagellates can be gotten out of the stools, the diarrhea, as a rule, ceases. We find, however, great difficulty in killing them out. I am sure that this is a chronic form of diarrhea endemic in the North. I do not know where the flagellates come from. Even Dr. Giffin gives no explanation as to how the entamebas get into the stools in the North. When a physician meets a case of chronic diarrhea in the North, he should examine the stools as systematically and carefully as the physician in the South.

DR. W. V. BREM, Los Angeles, Cal.: Dr. Bass has been using emetin hypodermically in the treatment of experimental amebic infections and prophylactically in quite a number of patients. He believes that of all the specifics in medicine emetin is probably the best against amebic infection.

Some time ago in reporting the result of the use of ipecac in amebic dysentery in Panama, I discussed at length the bismuth treatment as used by other men in Panama, and I expressed considerable doubt about its efficiency. I have recently examined the stools of a patient who was under treatment with ipecac according to the method that I felt to be the best. The treatment had no effect on the infection so far as eradication of the amebas was concerned. The patient was then put on the bismuth tratment, which immediately cleared up the infection. Darling, in Panama, has recently reported that he examined the stools of twenty-eight patients who had had amebic dysentery and been treated with bismuth. He found amebas in only one instance. The bismuth treatment of Deeks and Shaw may, therefore, be quite effectual in the treatment of amebic dysentery.

DR. W. W. TOMPKINS, Charleston, W. Va.: Will Dr. Giffin give the details of the coal-oil injection? It seemed to be satisfactory in all the cases.

DR. H. Z. GIFFIN, Rochester, Minn.: I shall answer only the question concerning the coal-oil treatment. Kerosene enemas have been used in the treatment of entamebic infections for four or five years. I have employed them alone in only a few cases, but with satisfactory results. After a few injections it was impossible to find the parasites. This is the reason I suggest that possibly this treatment should be given a further trial. After the large bowel is cleansed, about one quart of coal-oil is injected. The patient retains it for fifteen or twenty minutes, sometimes longer. The treatment is repeated about twice a week. There is no abdominal complaint whatever. The only irritation is possibly at the rectum, and this is easily overcome by using a small amount of petrolatum.

DR. W. W. TOMPKINS: What is meant by coal-oil? Does it mean simply kerosene?

DR. H. Z. GIFFIN: It means kerosene.

SARCOMA OF THE CHORIOID

A CASE WITH METASTASIS TO THE LIVER EIGHT YEARS AFTER ENUCLEATION OF THE EYE

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Sarcoma of the chorioid endangers not only the visual organ, but also life. When the eye is removed the prognosis as to life is absolutely grave. Even after the eye is removed life is still in danger, for it is impossible to foretell whether or not sarcomatous cells have been carried, prior to the enucleation, into the deeper tissues of the body. When the sarcoma is removed late in the course of the disease there is often a recurrence of the condition in the enucleated orbit, which eventually is the cause of death. If the eye is enucleated early, however, there is usually no recurrence locally, but the patient is still not free from the danger of metastasis. The case here reported shows a metastatic growth making its appearance eight years after the eye has been enucleated.

Miss A. L., aged 18, consulted me Feb. 5, 1905, on account of failing eyesight. Her left eye had been gradually failing for about two months. She felt otherwise well. She had a good family history. Examination showed both eyes quiet and free from any inflammation; right eye, perfectly normal; left eye, cornea normal; pupil 6 mm.; no reaction to light; vision equal to light perception.

Ophthalmoscopic examination showed a dark media and no fundus reflex. With a plus 7 lens several blood-vessels were seen over a grayish retina, which was detached. The eyeball was slightly prominent as compared to the right eyeball. The diagnosis was retinal detachment with a suspicion of a chorioidal tumor as the etiologic factor.

February 8: The eyeball protruded and tension was plus 2. Eye was somewhat painful on pressure and patient had headaches. I informed the patient of the gravity of the situation and advised an enucleation. Dr. Schwenk in consultation agreed with me. The patient, however, would not submit to an enucleation.

May 30: The patient returned with badly inflamed eye, severe pain and tension plus 3. The severe headache was evidently caused by the high intra-ocular pressure. Again I insisted on enucleation. She consented only after repeated warning on account of the danger to life.

June 8, 1906: The eyeball was enucleated and examined. A pigmented tumor the size of a small hazelnut was found at the posterior pole. Microscopic examination showed the tumor to be a melanotic sarcoma.

July 6: An artificial eye was inserted. No local recurrence followed and patient was well. She married in 1909 and gave birth to a healthy child.

Jan. 12, 1912: The patient consulted me on account of a conjunctivitis, which readily yielded to treatment. Otherwise the patient was in good health.

Jan. 3, 1913: The patient gave birth to another child. After delivery the family physician, Dr. Jacob, noticed an enlargement of the liver, which increased rapidly. Dr. Tyson was called in consultation and diagnosed a malignant growth of the liver. At the special request of the patient and family, and with consent of the attending physician, I saw the patient, January 10. I found her in bed, markedly emaciated and yellowish pale in color. The liver was very large, coming down below the umbilicus, filling in practically the entire abdominal cavity. The growth was lobulated. Four distinct lobules could be felt. The patient was very weak. She died May 6. No post-mortem was obtainable. The diagnosis, however, was clear.

The case is of considerable interest and shows that in sarcoma of the chorioid metastatic growths with a fatal termination may occur at any remote period after the eye has been enucleated, even though the tumor did not recur locally. It further emphasizes the absolute necessity of early diagnosis and prompt removal of the eye in order to save life.

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Necessity of Vital Statistics for Control of Contagious Diseases.—A community which has no means of knowing with what contagious diseases it is afflicted, nor how many cases there are, nor where they are, is helpless to protect itself, and unnecessary sickness and death will result.—Assistant Surgeon-General Trask.

Special Article

ELEVENTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

This week, for the eleventh consecutive year, THE JOURNAL presents statistics of deaths and injuries resulting from the celebration of the Fourth of July, with particular reference to tetanus or lockjaw resulting from these injuries. With the rapid decline in the number of casualties in the last few years, instead of relaxing its vigilance THE JOURNAL has made extra effort to secure complete and accurate data. As reported last year, a large majority of the blanks were returned from hospitals with the statement that no cases were treated. From others only a few names were reported, whereas in previous years several pages were required to contain the lists. Our thanks are extended to health officers, hospital superintendents, physicians and others for the careful reports which have made these statistics practically complete and the figures fairly reliable. The data are presented in the same manner as heretofore so that the comparison with the figures of previous years may be made.

TABLE 1.—CASES OF TETANUS

Name.	Sex.	Age.	Cause of Wound.	Site of Wound.	Duration in Days*	Day Antitoxin was used.	Termination
INDIANA							
Harris	M.	15	Bl. ctg.	Hand.	(4) 6	..	D.
KANSAS							
Macconslongue	M.	14	Bl. ctg.	.....	.....	..	D.
NEW YORK							
Ross	M.	12	Bl. ctg.	Hand.	7	..	D.
Evans	M.	11	Bl. ctg.	Hand.	(11) 31	11	R.

* Figures in parentheses show incubation period.

TABLE 2.—TETANUS CASES BY STATES
Comparison With Previous Years

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Alabama	..	..	1	..	.	..	..	..	..	..	..
Arizona	..	..	..	..	1	..	..	..	..	..	..
California	2	4	4	3	1	.	2	1	2	1	..
Colorado	4	..	1	..	..	1	..	..	..	..	..
Connecticut	3	..	2	..	4	1	..	..	..	..	..
Delaware	..	..	1	1	1	..	2	..	..	..	..
District of Columbia	1	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	1	..	..	..	..
Georgia	..	..	..	..	1	..	..	..	..	..	..
Idaho	1	..	..	..	..	..	1	..	..	..	..
Illinois	49	15	20	16	12	12	20	10	5	..	..
Indiana	11	6	3	8	2	..	9	6	..	1	1
Iowa	14	2	3	4	4	1	1	1	1	..	..
Kansas	11	1	..	..	2	1	6	..	..	..	1
Kentucky	4	2	..	1	..	1	1	..	..	..	..
Louisiana	..	..	..	..	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1	1	..	..	..
Maryland	1	..	1	1	..	2	1	..	..	..	..
Massachusetts	16	5	7	3	2	5	2	..	1	1	..
Michigan	29	7	9	4	4	2	11	11	2	1	..
Minnesota	15	2	2	2	2	..	..	..	..	..	..
Missouri	29	1	3	3	1	5	8	2	..	..	..
Montana	2	1	1	..	1	..	3	2	..	..	..
Nebraska	4	3	3	1	..	1	3	1	..	..	..
New Hampshire	2	..	..	1	..	..	1	..	..	..	..
New Jersey	8	9	3	10	8	10	19	9	3	..	..
New York	36	9	6	8	4	9	11	7	1	..	2
North Dakota	..	..	..	..	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12	3	3	..	..
Oklahoma	1	..	1	1	..	1	..	1	..	1	..
Oregon	2	..	..	1	1	1	..	..	..	..	..
Pennsylvania	82	17	12	5	7	7	10	11	1	..	..
Rhode Island	3	..	..	1	..	..	..	..	..	..	..
South Carolina	..	..	..	..	..	..	..	..	..	..	..
South Dakota	..	..	..	..	..	..	1	..	..	..	..
Tennessee	..	..	..	..	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..	..	..	..	..
Utah	..	1	1	..	..	..	..	1	..	..	..
Vermont	3	2	..	2	2	..	..	..	..	..	..
Washington	2	1	..	..	2	4	4	1	..	..	..
West Virginia	3	..	..	2	..	1	4	..	..	2	..
Wisconsin	16	4	13	2	3	5	9	3	2	..	..
Wyoming	..	..	..	1	..	..	..	..	..	..	..
Total	417	105	104	89	73	76	150	72	18	7	4
States having cases	30	21	23	25	23	20	25	18	10	6	3

FEWER CASES OF LOCKJAW

Only four cases of tetanus were reported this year as compared with seven last year, eighteen in 1911, seventy-two in 1910 and 150 in 1909. The returns this year are most encouraging and give hope that deaths from this senseless cause will soon cease.

TABLE 3.—RATIO OF TETANUS CASES TO BLANK CARTRIDGE INJURIES

Year.	Tetanus Cases.	Blank Cartridge Injuries.	Ratio.
1913	4	97	1:24.25
1912	7	75	1:10.71
1911	18	185	1:10.28
1910	72	450	1: 6.25
1909	150	1,225	1: 8.17
1908	76	942	1:12.39
1907	73	606	1: 8.16
1906	89	979	1:11.00
1905	104	809	1: 7.78
1904	105	905	1: 8.62
1903	417	1,672	1: 4.27
Totals	1,115	7,945	1: 7.12

The ages of the four lockjaw patients this year were 15, 14, 12 and 11 years, respectively, and all were boys. In three cases the injury was on the hand; in the other the site was not given. The length of time between injury and death was six days in one and seven days in another. In the third case the dates were not given by which the time could be computed, and in the fourth patient (who recovered) the time between the injury and complete recovery was thirty-one days. The figures in parentheses (Table 1) give the number of days between the time of injury and the appearance of active symptoms of tetanus, this being in four and eleven days, respectively. In the patient who recovered, antitoxin was first used on the eleventh day, when active symptoms appeared. The long incubation period would seem to indicate a germ of feeble virulence, which may partly account for the recovery. The list of tetanus cases is given in Table 1.

TABLE 4.—CAUSES OF TETANUS CASES

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Fire-arms.	Powder, etc.	Total.
1903	363	17	5	3	29	417
1904	74	18	5	1	7	105
1905	65	17	4	5	13	104
1906	54	17	1	7	10	89
1907	32	8	6	4	3	73
1908	58	5	4	3	6	76
1909	130	9	1	4	6	150
1910	64	2	..	5	1	72
1911	15	1	1	..	1	18
1912	7	..	..	..	..	7
1913	4	..	..	..	..	4

DISTRIBUTION OF TETANUS

The tetanus cases by states are shown in Table 2. Cases occurred in only three states this year as against six states last year, ten states in 1911, eighteen states in 1910 and twenty-five states in 1909. Two of the cases occurred in New York and one case each occurred in Indiana and Kansas.

THE DEADLY BLANK CARTRIDGE

Blank-cartridge wounds, which have always been responsible for a large majority of tetanus cases, this year caused all four cases. With a full knowledge of this fact and of the awfulness of the deaths from lockjaw, there should be no relaxation in the restrictions against the use of blank-cartridge pistols.

As may be noted on comparison of the statistics of this year with those of previous years (Table 3), there is a significant ratio each year between the number of tetanus cases and the number of blank-cartridge wounds. A larger number of blank-cartridge wounds almost invariably brings also a larger number of cases of lockjaw. The smaller number of tetanus cases in recent years in proportion to the blank-cartridge injuries is doubtless due to the greater care in treating wounds from this cause.

TABLE 5.—CASES OF TETANUS FROM OTHER CAUSES

	1908	1909	1910	1911	1912	1913		1908	1909	1910	1911	1912	1913
Alabama	...	...	1	1	...	...	New Hampshire	...	...	...	...	...	...
Arizona	...	...	...	...	...	1	New Jersey	7	8	8	1	...	...
Arkansas	2	...	...	...	...	...	New Mexico	...	1	...	...	...	...
California	4	4	1	2	7	10	New York	17	12	4	2	4	...
Colorado	3	...	...	1	...	...	North Carolina	1	...	...	...	...	1
Connecticut	2	2	...	...	...	...	North Dakota	1	...	...	...	...	...
Delaware	2	1	...	...	...	...	Ohio	23	13	2	...	2	1
Dist. of Col.	...	...	...	...	...	...	Oklahoma	...	...	...	...	...	...
Florida	2	...	...	...	...	...	Oregon	...	1	3	...	2	...
Georgia	...	1	...	...	...	...	Pennsylvania	21	21	8	6	4	1
Idaho	...	...	...	...	...	...	Rhode Island	...	1	...	...	...	...
Illinois	17	18	7	6	10	7	South Carolina	...	...	...	...	...	...
Indiana	6	4	1	2	1	3	South Dakota	2	2	...	...	...	...
Iowa	2	7	3	1	...	2	Tennessee	3	...	...	...	1	1
Kansas	4	...	1	...	...	...	Texas	4	1	1	...	...	...
Kentucky	5	5	...	1	2	...	Utah	...	...	...	...	...	...
Louisiana	1	...	...	1	3	2	Vermont	...	...	1	...	...	...
Maine	...	...	...	...	...	...	Virginia	4	1	...	1	2	1
Maryland	2	...	2	1	1	...	Washington	2	1	...	...	1	...
Massachusetts	3	5	...	...	...	...	West Virginia	...	1	...	...	...	...
Michigan	4	5	1	...	...	...	Wisconsin	5	4	1	...	...	1
Minnesota	4	2	...	...	...	...	Wyoming	...	...	...	...	...	...
Mississippi	...	...	...	...	...	...							
Missouri	12	5	1	2	3	...	Total	166	128	47	29	44	32
Montana	...	...	...	...	...	...							
Nebraska	...	3	1	1	1	...	States reporting cases	29	25	18	15	15	12
Nevada	...	...	...	...	...	...							

Of the four cases of tetanus reported this year, three, or 75 per cent., were fatal as compared with 86 per cent. last year, 55 per cent. in 1911, 93 per cent. in 1910 and 84 per cent. in 1909.

TETANUS FROM INJURIES NOT CAUSED BY FIREWORKS

Besides the cases of lockjaw due directly to the use of fireworks, it is interesting to note also those occurring during the Fourth of July season which were due to penetrating wounds from other causes, such as nails, splinters, crushing injuries, etc. There was a slight reduction in these cases this year, thirty-two cases being reported as compared with forty-four cases last year. Tetanus germs, therefore, were apparently fully as prevalent if not more so this year than in previous years, which makes the marked reduction in recent years of cases from Fourth of July injuries all the more significant and gratifying

DEATHS AND INJURIES NOT CAUSED BY TETANUS

Besides the three deaths due to tetanus, twenty-nine persons were killed by various forms of fireworks, making a total of thirty-two deaths, nine less than last year, twenty-five less than in 1911 and ninety-nine less than in 1910. This is the lowest number of deaths from such causes during the eleven years covered by the statistics of THE JOURNAL, and shows a most significant improvement over previous years. This year eight persons were killed outright by firearms, six by explosions of powder, bombs or torpedoes, one by a cannon and one of blood-poisoning following a slight injury by a large firecracker. The largest number killed by any one cause this year, however, were the thirteen persons, mostly little girls or small children, who were burned to death by fire from fireworks, two of these being reported as due to supposedly harmless "snapper matches." All accidents not due directly to the discharge or handling of fireworks or other means of noise production and display on or about the Fourth of July have been omitted. Table 6 shows a comparison of the causes of deaths aside from tetanus for the past nine years.

DISTRIBUTION OF INJURIES

In Table 7 a summary of all injuries, including tetanus, and of all causes, will be found arranged by states. Beneath the totals at the bottom are given, for comparison, the totals for the ten previous years and the grand totals for the eleven years. Table 8 permits the comparison by states of the total deaths and injuries for ten years. The number of casualties this year was 1,106, an increase of 116 over the total reported last year. In seventeen states the totals this year show an increase over last year, although in most instances the totals are less than two years ago. Pennsylvania had 491 casualties this year, an increase of 226 over last year and 49 more than in 1911. New York had 144 casualties, or 29 more than last year, but 93 less than in 1911. Missouri and Connecticut reported, respectively, 83 and 50 cases this year, the largest totals in those states since 1910. Illinois had only 47 cases as compared with 39 last year and with 218 in 1911. It should be noted that Illinois had 598 casualties in 1906 and 558 in 1908. The figures for the last two years are very small as compared with previous years for California, Illinois, Indiana, Iowa, Massachusetts, Michigan, Missouri, New Jersey, Ohio and Wisconsin. Marked reductions also are seen in New York. Pennsylvania last year had a marked reduction, but still leads in having the largest number of casualties. Of the 491 casualties in Pennsylvania, 340 were reported from Philadelphia.

TABLE 6.—CAUSES OF DEATHS NOT DUE TO TETANUS

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, Etc.	Giant Crackers.	Cannon.	Other Causes.	Total
1905	37	23	6	5	7	17	95
1906	38	18	18	3	3	3	83
1907	20	31	13	13	3	22	102
1908	50	22	19	23	7	7	108
1909	17	37	16	7	7	6	90
1910	19	26	11	2	3	3	64
1911	11	12	9	2	5	8	47
1912	9	8	7	2	2	7	35
1913	8	13	6	..	1	1	29
Totals	189	190	105	57	38	74	653

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NATURE OF NON-FATAL INJURIES

There were 1,131 non-fatal injuries this year, or 194 more than last year, but 415 less than in 1911. Two persons were totally blinded this year, twenty-two lost one eye each, ten lost legs, arms or hands, and forty-six lost one or more fingers. Although in the last two years there has been a marked reduction in the total number of non-fatal injuries, the totals of these more severe injuries are about the same as reported for the two previous years. The giant firecracker continues to hold the first place as a cause of lacerated wounds and is responsible for most of the losses of eyes, hands and fingers. This year 312 injuries were due to the giant firecracker. Firearms caused 169 accidents this year, including eight killed. Of the total number thus injured many were orderly persons who were struck by stray bullets from the reckless use of firearms by others, and two of these persons died. The use of cannon caused sixty-two injuries, including one killed. In the eleven years, a total of 41,280 people—the equivalent of over forty regiments—were killed or injured in the celebration of the Fourth of July!

TOTALS IN CHIEF CITIES

Table 9 shows the number reported killed and injured in our largest cities during each of the past seven years. The cities are arranged according to their population as given by the United States census in 1910. This table is

TABLE 7.—SUMMARY BY STATES OF FOURTH OF JULY CASUALTIES

Number.	States.	Deaths.			Injuries						Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of all Cases Aside from Tetanus Cases.				Number
		From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-Fatal Injuries.		Blank Cartridge.	All Other Causes.	Blank Cartridge.	Firecracker.	Cannon.	Firearms.	Powder and Fireworks.	
1	Alabama								1	1	1						1		1
2	Arizona																		2
3	Arkansas																		3
4	California						2	2	18	22	22			1	4	6	3	8	4
5	Colorado								1	1	1								5
6	Connecticut							2	48	50	50			34	6	2	10	8	6
7	Delaware								6	6	6				4			2	7
8	District of Columbia								1	1	1			1					8
9	Florida																		9
10	Georgia								4	4	4				3		1	1	10
11	Idaho																		11
12	Illinois		4	4				2	41	43	47			2	13	4	17	11	12
13	Indiana	1		1	1	1		1	8	11	12	1			4		2	5	13
14	Iowa					1		1	20	22	22				12	1	1	7	14
15	Kansas	1	1	2			1		2	3	5	1			2	2			15
16	Kentucky					1			1	2	2							2	16
17	Louisiana								4	4	4					1		3	17
18	Maine								6	6	6				4		1	1	18
19	Maryland		2	2			1		12	13	15			1	4	1	1	8	19
20	Massachusetts		2	2	1	2		3	34	40	42			3	18	2	9	10	20
21	Michigan		1	1		1	1		18	20	21			1	4	2	3	11	21
22	Minnesota					1			5	6	6				5	1			22
23	Mississippi																		23
24	Missouri					2		1	80	83	83			5	32	3	16	27	24
25	Montana																		25
26	Nebraska							1	16	17	17				9	2		6	26
27	Nevada																		27
29	New Hampshire		1	1					2	2	3				3				28
29	New Jersey		3	3					18	18	21			4	7		4	6	29
30	New Mexico								3	3	3							3	30
31	New York	1	2	3		2		8	131	141	144	2		25	40	9	30	38	31
32	North Carolina																		32
33	North Dakota																		33
34	Ohio		1	1			1	9	59	69	70			8	18	6	8	30	34
35	Oklahoma								1	1	1					1			35
36	Oregon		1	1		1			2	3	4				3				36
37	Pennsylvania		9	9		8	2	12	460	482	491			19	100	15	50	307	37
38	Rhode Island		2	2		1	1		17	19	21			1	3	2	6	9	38
39	South Carolina																		39
40	South Dakota																		40
41	Tennessee								3	3	3						2	1	41
42	Texas							1	1	2	2							2	42
43	Utah								1	1	1				1				43
44	Vermont																		44
45	Virginia																		45
46	Washington						1	1	11	13	13			1	5	2	1	4	46
47	West Virginia								3	3	3				1		2		47
48	Wisconsin					1		2	13	16	16			1	7		1	7	48
49	Wyoming																		49
	1913 totals	3	29	32	2	22	10	46	1,051	1,131	1,163	4	0	97	312	62	169	519	
	1912 totals	6	35	41	8	21	13	42	862	947	988	7	0	70	362	75	157	317	
	1911 totals	10	47	57	8	26	20	62	1,289	1,546	1,603	15	3	178	484	114	184	633	
	1910 totals	67	64	131	7	33	26	114	2,612	2,792	2,923	64	8	396	1,050	212	229	974	
	1909 totals	125	90	215	16	38	41	176	4,823	5,092	5,307	130	20	1,066	1,614	427	341	1,680	
	1908 totals	55	108	163	11	30	57	184	5,115	5,400	5,623	58	18	816	1,782	390	481	2,056	
	1907 totals	62	102	164	12	75	57	237	3,898	4,249	4,413	52	21	554	1,489	267	502	1,528	
	1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,600	408	532	1,822	
	1905 totals	87	95	182	25	106	80	221	4,502	4,934	5,176	65	39	744	1,775	474	404	1,675	
	1904 totals	91	92	183	19	61	61	266	3,857	3,998	4,186	74	75*	831	1,269	508	466	1,057	
	1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29†	1,309	1,152	397	236	363	
	Total for eleven years	967	805	1,792	140	620	485	1,713	36,530	39,488	41,280	886	198	6,997	12,989	3,343	3,641	13,226	

* Kind of fireworks causing six tetanus cases unknown. † Kind of fireworks causing 24 cases of tetanus unknown.

of particular interest, since the results in cities in which prohibitive or restrictive ordinances have been adopted can be seen. Prohibitive ordinances were enforced this year in Baltimore, Boston, Chicago, Cleveland, Detroit, Newark, Toledo, Trenton, Washington and elsewhere. Restrictive measures were used in New York, St. Louis, Pittsburgh, Buffalo and elsewhere. Philadelphia reported three deaths this year, Providence reported two, and one each was reported for Chicago, Boston, Baltimore, Pittsburgh and Detroit, making a total of only ten deaths in seven of our eighty-four largest cities, as compared with twelve killed last year, sixteen in 1911, forty-three in 1910 and eighty in 1909. For the last three years Philadelphia is the only large city having more than 100 injuries, having reported 340 this year, a marked increase over last year, when 127 were

TABLE 8.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING TEN YEARS

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Alabama	7	1	2	1	1	1	3	3	..	1
Arizona	..	4	5	2	3	..	..	2	..	..
Arkansas	..	3	4	..	5	1	4	1	1	..
California	138	142	96	121	136	89	63	43	31	22
Colorado	44	26	23	25	13	18	19	6	21	1
Connecticut	133	132	109	63	105	86	78	15	30	50
Delaware	5	14	8	16	12	13	8	3	6	6
Dist. Columbia	10	24	5	12	21	..	..	..	2	1
Florida	2	2	..	..	..	1	4	..	..	..
Georgia	..	..	4	2	4	..	5	10	28	4
Idaho	4	3	3	4	4	2	3	1	2	..
Illinois	423	542	508	468	558	546	285	218	39	47
Indiana	211	217	250	..	255	164	167	53	43	12
Iowa	137	328	135	231	174	91	141	54	24	22
Kansas	86	56	61	64	77	86	50	25	8	5
Kentucky	72	17	21	18	33	17	26	6	5	2
Louisiana	2	3	7	8	4	..	4	2	2	4
Maine	32	20	15	11	16	22	7	4	..	6
Maryland	22	13	10	23	21	10	8	13	11	15
Massachusetts	193	467	329	168	430	430	63	27	45	43
Michigan	157	288	193	163	203	177	143	69	50	21
Minnesota	102	174	95	95	65	69	64	17	17	6
Mississippi	..	..	2	2	1	..	..	1	1	..
Missouri	84	218	325	290	375	352	112	60	57	83
Montana	17	40	3	6	11	9	10	..	6	..
Nebraska	63	43	47	58	46	42	36	17	12	17
Nevada	1	2	..	1	4	..	1	..	..	..
New Hampshire	23	9	29	13	13	23	10	2	3	3
New Jersey	304	350	308	402	472	488	167	43	16	21
New Mexico	4	5	1	6	..	1	3	..	..	3
New York	549	566	681	732	647	897	327	225	115	144
North Carolina	..	1	1	..	..	..	1	3	..	..
North Dakota	8	29	11	8	13	4	13	1	2	..
Ohio	327	329	460	375	543	325	166	105	55	70
Oklahoma	3	7	14	194	9	12	11	9	11	1
Oregon	13	9	11	3	9	21	10	3	5	4
Pennsylvania	744	721	969	491	987	986	623	442	265	491
Rhode Island	30	11	21	39	39	42	19	11	2	21
South Carolina	..	..	1	..	..	4	..	1	..	..
South Dakota	10	15	5	8	10	9	4	2	..	..
Tennessee	1	5	6	4	5	4	10	3	12	3
Texas	2	4	11	7	11	4	2	..	3	2
Utah	22	25	18	30	12	18	8	2	1	1
Vermont	14	10	14	18	19	12	4	4	1	..
Virginia	11	5	8	..	5	..	..	3	1	..
Washington	25	15	25	23	38	22	37	22	12	13
West Virginia	16	34	64	27	39	25	20	2	2	3
Wisconsin	213	230	155	150	187	157	171	52	28	16
Wyoming	2	8	3	..	1	1	4	4	1	..
Totals	4169	5176	5466	4413	5823	5307	2923	1693	988	1163

reported. Altogether 854 non-fatal injuries were reported for these large cities this year, as compared with 522 last year, 771 in 1911, 1,455 in 1910 and 2,935 in 1909. A slight increase over last year is seen in the records of most of these cities, although other cities, notably Chicago, Boston, Detroit and Milwaukee, have kept the returns down to last year's record or show even lower records. Of these eighty-four cities, twenty-five have a record of six or more injured, four more than last year, but twenty-two less than in 1910 and thirty-three less than in 1909. There were thirty-one of these cities which had a clean record this year, as compared with thirty last year, twenty-four in 1911, eighteen in 1910 and eleven in 1909. Probably the most marked reductions in the number of injured in the last few years have been in Chicago, Boston, Milwaukee and Newark. From Newark no casualties have been reported during the last three years, although there were 150 injured and one killed there in 1909. It is noteworthy that nearly two-thirds of all casualties this year were in fifty-three of these larger cities.

WHERE THE RESPONSIBILITY RESTS

As has been repeatedly stated in these annual reports, the responsibility for the great majority of Fourth of July injuries clearly rests with city governments, since the employment of death-dealing methods of celebration is subject to their regulation. It is clearly the duty of city authorities, therefore, to decide whether or not the maiming of hundreds, the agonizing deaths from lockjaw and the burning to death of little children by fire from fireworks are to be continued. If fifty-three of these larger cities would do as the other thirty-one have done there would be no casualties to report. Prohibitory ordinances are most effective and permanent, as shown by the results in Baltimore, Cleveland, Newark, Trenton, Chicago, Washington and elsewhere, and even restrictive ordinances, if they could be rigidly enforced, would have good results. But the enforcement of restrictive measures is difficult and requires constant vigilance on the part of the police. By the sound it is difficult to know whether an explosion is due to a firecracker 3 inches long or to one 5 inches long, or whether it is due to some other forbidden form of fireworks. Under the prohibitory ordinance, however, any explosion is recognized at once as a violation of the law. Again, the smaller firecrackers, sparklers and "snapper matches," which have been considered so harmless, caused the fires this year by which several girls or small children were burned to death.

RECENT PROGRESS

It was understood from the beginning that the obliteration of the sorrow and suffering needlessly caused during the annual celebration of the Fourth of July could be brought about only by a campaign of education vigorous enough to change a national custom which had endured for many years and which had its origin in a sincere display of patriotism. It was clear, however, that no patriotism was worthy the name which for its preservation required annually the sacrificing of hundreds and the mutilation of thousands of the youth of the land.

For several successive years THE JOURNAL had collected and published the statistics showing the results of the noisy, barbaric celebration of July 4, but apparently with very little effect. In spite of the efforts of THE JOURNAL and a few prominent newspapers, notably the Chicago *Tribune*, scarcely any attention was paid to the awful facts. In 1908, however, another table (Table 9) was added to THE JOURNAL'S statistics, in which the number killed and injured in each of the eighty-four largest cities were shown. It was also shown that the responsibility for these casualties clearly rested with city governments. When the 1908 report was published, reprints were circulated far and wide among newspapers and other publications. The result has been most remarkable. Since that time not only has the press of the country generally taken up the cause, but also local, state and national organizations and societies have become interested. They have not only argued

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against the use of fireworks, but, more important, have also provided more rational and patriotic means of celebration. An unusually vigorous action has been taken by many city councils during the last few years in the adoption and enforcement of restrictive or prohibitive legislation, and each year these ordinances are growing more and more prohibitive. All of these forces have made most liberal use of THE JOURNAL'S statistics even though they have not always mentioned the source. Be that as it may, however, the result has been a marked reduction in the totals of casualties to a small fraction of what they were in previous years. The necessity of perseverence in this campaign for better methods of celebration is aptly shown by the record of Philadelphia. In spite of a most vigorous campaign which has been carried on during the last three years, that city still reports 340 casualties. A continuance of that campaign, however, will doubtless eventually give that city a better record. Reports received indicate that hundreds of smaller cities and towns, following the example of their larger sisters, are enforcing either restrictive or prohibitive measures. More of such measures should be adopted. More important still, there should be no relaxation in the enforcement of these ordinances such as is indicated by the increase of casualties this year over the number reported a year ago.

TABLE 9.—NUMBER REPORTED KILLED AND INJURED IN THE LARGER CITIES

City.	1907		1908		1909		1910		1911		1912		1913	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New York City	22	422	11	316	7	550	6	179	3	91	1	58	..	65
Chicago	16	151	12	297	..	118	4	62	2	53	2	12	1	12
Philadelphia	7	248	6	486	9	508	4	405	..	294	2	127	2	340
St. Louis	3	189	4	229	4	103	..	44	..	39	..	49	..	72
Boston	3	59	6	190	5	167	..	35	..	3	..	16	1	15
Cleveland	3	63	12	93	..	4	..	1	..	5	..	1	..	4
Baltimore	..	5	1	10	..	5	..	6	..	10	..	10	1	12
Pittsburgh	10	80	..	30	5	46	6	26	1	25	1	14	1	40
Detroit	2	46	10	2	46	1	17	..	18	2	20	1	3	
Buffalo	..	18	3	11	..	33	1	13	..	16	..	6	..	16
San Francisco	..	..	..	11	..	12	..	9	1	8	..	7	..	9
Milwaukee	2	93	..	70	..	78	3	112	1	19	..	24	..	10
Cincinnati	2	80	1	112	3	86	3	69	1	4	..	21	..	20
Newark, N. J	1	129	2	81	1	150	1	15	..	..	..	..	..	..
New Orleans	..	8	..	4	..	..	..	3	..	2	..	2	..	3
Washington, D. C	..	12	..	21	..	..	..	..	..	..	..	2	..	1
Los Angeles, Cal	..	35	..	40	..	26	..	..	..	4	..	5	..	6
Minneapolis, Minn	..	13	..	10	1	24	..	70	..	..	..	..	..	2
Jersey City, N. J	..	31	5	34	1	14	1	44	..	14	..	3	..	..
Kansas City, Mo	1	46	..	55	4	67	1	25	..	4	..	1	..	..
Seattle, Wash	1	5	..	11	3	16	..	..	..	..	..	2	..	2
Indianapolis, Ind	1	31	1	14	1	35	..	24	..	5	..	6	..	1
Providence, R. I	..	20	1	21	..	13	..	10	1	9	..	..	2	17
Louisville, Ky	..	13	..	10	1	10	1	13	..	3	..	2	..	2
Rochester, N. Y	..	10	..	10	..	3	..	13	..	4	..	2	..	4
St. Paul, Minn	..	20	..	13	..	18	..	18	..	10	..	7	..	2
Denver, Colo	..	8	..	13	..	12	1	6	..	2	..	7	..	1
Portland, Ore	..	2	..	3	..	16	..	13	..	1	..	2	..	..
Columbus, Ohio	..	5	..	5	..	19	..	..	..	1	..	2	..	7
Toledo, Ohio	1	5	..	8	2	3	1	2	..	2	1	..	..	7
Atlanta, Ga	1	4	..	3	..	..	..	5	..	10	..	28	..	4
Oakland, Cal	..	9	..	..	..	8	..	9	..	1	..	2	..	..
Worcester, Mass	1	6	2	20	1	42	..	6	..	1	..	10	..	14
Syracuse, N. Y	..	20	..	14	..	12	..	6	..	1	..	4	..	15
New Haven, Conn	..	2	..	..	..	15	..	..	..	1	..	6	..	10
Birmingham, Ala	..	..	..	..	..	..	..	..	..	3	..	..	..	..
Memphis, Tenn	..	1	..	2	..	..	..	2	..	..	..	2	..	1
Scranton, Pa	..	5	1	17	1	29	..	6	..	10	..	..	..	9
Richmond, Va	..	..	..	..	1	1	..	..	..	..	..	..	..	..
Paterson, N. J	1	20	2	31	1	45	1	14	..	5	..	2	..	4
Omaha, Neb	..	25	..	10	1	17	..	17	..	7	1	2	..	16
Fall River, Mass	..	..	..	12	..	19	..	1	..	..	..	1	..	..
Dayton, Ohio	..	11	..	14	..	4	..	2	..	4	..	1	..	..
G. Rapids, Mich	..	20	1	30	..	3	..	17	1	6	..	9	..	13
Nashville, Tenn	..	2	..	..	..	..	..	8	..	2	..	10	..	2
Lowell, Mass	..	23	..	18	..	..	1	..	1	1	..	..	..	..
Cambridge, Mass	..	..	..	17	..	..	..	..	..	4	..	..	..	..
Spokane, Wash	..	..	..	..	..	..	..	..	..	7	..	4	..	8
Bridgeport, Conn	..	1	..	27	..	21	..	4	..	4	..	1	..	3
Albany, N. Y	1	24	..	27	..	31	..	13	1	5	..	..	..	4
Hartford, Conn	..	18	..	18	..	11	..	14	..	1	..	9	..	27
Trenton, N. J	..	38	1	17	1	58	..	..	..	1	..	..	..	1
New Bedford, Mass	..	..	..	3	..	..	..	..	..	..	..	..	..	..
Reading, Pa	..	17	..	13	..	17	1	3	..	4	..	3	..	21
San Antonio, Tex	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Camden, N. J	..	16	..	29	4	14	..	6	..	..	1	..	..	..
Salt Lake City	..	15	..	6	2	14	1	4	..	..	..	1	..	1
Lynn, Mass	..	3	..	11	3	16	..	4	..	..	..	2	..	..
Springfield, Mass	..	21	1	26	1	9	1	2	..	4	..	..	..	1
Wilmington, Del	1	14	..	13	3	9	..	6	..	3	..	5	..	6
Des Moines, Iowa	1	31	..	41	..	13	..	23	..	12	..	..	..	6
Lawrence, Mass	..	11	1	..	5	22	..	..	..	..	..	..	..	..
Tacoma, Wash	2	8	1	3	..	3	..	2	..	..	..	1	..	..
Kansas City, Kan	1	10	..	17	..	33	..	14	1	5	..	..	..	..
Yonkers, N. Y	..	32	..	5	..	8	..	..	..	4	..	..	..	..
Houston, Texas	..	..	..	1	..	1	..	..	..	..	..	..	..	..
Duluth, Minn	..	13	..	9	2	10	..	3	..	..	..	..	..	..
St. Joseph, Mo	1	23	1	41	1	24	..	11	..	1	..	..	..	..
Somerville, Mass	..	..	..	..	..	1	..	2	..	..	1	..	..	..
Troy, N. Y	..	..	2	18	..	16	1	8	..	2	..	1	..	1
Utica, N. Y	..	18	..	10	..	5	..	1	..	..	..	..	..	2
Waterbury, Conn	2	8	..	14	..	5	15	1	..	..	..	..	..	1
Schenectady, N. Y	..	4	..	20	..	8	1	14	..	7	..	..	..	1
Hoboken, N. J	..	1	1	24	..	7	..	4	..	..	..	1	..	..
Elizabeth, N. J	..	43	..	72	..	37	..	15	..	1	..	..	..	..
Manchester, N. H	..	3	..	1	1	5	..	..	..	..	..	1	..	1
Evansville, Ind	..	5	..	12	..	6	..	7	..	1	..	..	..	..
Norfolk, Va	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wilkes-Barre, Pa	1	..	3	38	1	15	2	8	1	2	..	5	..	..
Peoria, Ill	..	8	..	27	1	22	1	17	..	..	..	2	..	..
Erie, Pa	..	..	..	1	..	4	..	2	..	3	..	1	..	1
Savannah, Ga	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Harrisburg, Pa	..	23	1	71	..	22	..	3	..	1	..	..	..	..
Portland, Maine	1	2	..	..	..	2	..	..	1	2	..	..	..	1
Totals	94	2,478	83	2,860	80	2,925	43	1,455	16	771	12	522	10	854
Totals elsewhere	70	1,791	80	2,600	135	2,156	88	1,337	41	775	29	423	22	309
Grand total	164	4,249	163	5,460	215	5,091	131	2,792	57	1,546	41	945	32	1,163

THE METHOD OF SUBSTITUTION

Better by far than the mere negative methods of restriction or prohibition, however, has been the extensive agitation by various societies for more sensible methods of celebration. Our national Independence Day must cease to be a day of destruction and become a day of recreation, joy and enlightenment. From many of our larger cities comes the news that instead of the ear-splitting din of former years, those cities this year were more quiet than on an average Sunday. In many cities special celebrations and parades have been tried. The display of flags, the music of bands, the children's parade, the witnessing of historic floats, the picnics, the trips to the parks and visiting of friends—these methods are surely a more fitting and patriotic way of celebrating the day than by the senseless din and destruction of former years. And the result of such methods is evident: the smallest number of lockjaw cases and other deaths reported in any year since THE JOURNAL began the collection of these statistics, fewer blinded eyes, fewer maimed bodies and an astonishing reduction in the number of injuries. There are still too many of these injuries, however, and this year in an increased number. The campaign must be continued until the nation's disgrace shall be entirely removed.

Reduction of Rent per Child.—Professor Broca of Paris has been instrumental in the founding of a Paris company which owns tenements to rent to families with children exclusively. With three children under the age of 16 the rent is reduced by 20 per cent. of the rent-rates current in the vicinity. A further reduction of nearly five dollars a year is made for each additional child under 13; of three dollars for each additional child between 13 and 14, and of about two dollars for children between 14 and 15. This plan puts a premium on large families, and seems to be working finely, the owners of the property being content with the 3 per cent. income when property around, not granting the reduction, brings in a larger revenue. Broca recently reported at the annual meeting of the society in question that the mortality in its tenements was only from 5.9 to 14.4 per thousand, while in similar quarters elsewhere it ranged from 18 to 25 per thousand. The official title of the organization is the Société des logements économiques pour familles nombreuses (Society to provide economical dwellings for large families). The tenements are of the type that rent usually for from $70 to $100 or $150 a year.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading-matter.

SATURDAY, AUGUST 30, 1913

THE FOURTH OF JULY IN 1913

Another Fourth of July has been celebrated; the returns are now all in; all cases of lockjaw that have developed from such injuries have been checked up; all fatalities have been investigated and the results have been tabulated. These results appear this week on another page.

DEATHS FROM FIREWORKS

The fatalities this year were not so numerous as last year, there being only thirty-two deaths from fireworks as compared with forty-one last year, 215 in 1909 and 466 in 1903. Only 3 of these deaths were due to tetanus as compared with 6 last year, 125 in 1909 and 406 in 1903. These marked reductions in fatalities and in the numbers of tetanus cases give the best evidence that the old-time barbarous celebration is about over.

TOTAL CASUALTIES

This year the total number of casualties including the non-fatal injuries was 1,163, as compared with only 988 last year, with 1,603 in 1911 and with 5,623 in 1908, when the highest number of casualties was reported. There was an increase, therefore, over the total for last year although a decrease below the totals reported in all previous years. It is interesting to note, however, that over 40 per cent. of all casualties were in Pennsylvania, which reported 491 injuries, including nine deaths. It is also interesting to note that of this total reported for Pennsylvania 340, or nearly 70 per cent., occurred in the city of Philadelphia. The citizens of Philadelphia, the birth-place of independence, always have been a demonstrative people, but unlike the country generally, they have failed to note that, hiding behind the fair name of patriotism, the celebration of Independence Day has degenerated into a disgraceful demonstration of lawlessness and disorder. The awakening appears near at hand, however, since during the last few years a vigorous campaign against the use of fireworks has been carried on by some of its most progressive citizens. The force of public opinion is already bringing results, since an ordinance prohibiting the use of fireworks was said to have been passed this year, although the increased number of injuries reported would indicate that little if any attempt was made to enforce it. A vigorous enforcement of that ordinance, therefore, would have done much to remove a disgrace not only from the fair city of Philadelphia, but also from the state and the entire nation. Outside of Pennsylvania there were only 672 casualties this year and only one other state, New York, reported more than one hundred injuries. In 1908 there were thirteen states reporting an average of nearly four hundred accidents each.

EVIDENCES OF PROGRESS

The returns this year show a decided progress, taking the country as a whole. A larger number of cities adopted prohibitory ordinances and many of the largest —Chicago as an example—reported the day as more quiet than the average Sunday. The people of these cities seem to have gladly welcomed their deliverance from the annual debauch of noise and destruction and have taken advantage of the parks, the bathing-beaches, the country or other places where the day could be enjoyed in quiet and in safety. After all, the chief objections to sane-Fourth ordinances came from those financially interested and from the hoodlum element which needed to be suppressed. In marked contrast with former years, there was in these cities little evidence of the use of fireworks, and the emergency hospitals and fire departments had almost nothing to do. On the other hand, flags, bunting, red-white-and-blue suits and parasols were everywhere in evidence. Most important, however, the enjoyment of the celebration was not marred by the usual aftermath of deaths, injuries and sorrow.

BEGINNING OF THE CHANGE

Eleven years have passed since THE JOURNAL began publishing annually reliable statistics concerning the awful cost in life and limb of the use of explosives in celebrating the Fourth of July. For six long years the reports seemed to have no effect in spite of the fact that pamphlets containing the statistics were widely circulated each year among civic officers and others. The appeals for saner methods of celebration seemed, with few exceptions, to fall on deaf ears. One of the most notable exceptions was the Chicago *Tribune*, which had for years carried on a propaganda of its own against the unnecessary toll of blood exacted by the "insane" Fourth. Finally in the report of 1908 THE JOURNAL began showing the casualties occurring in our largest cities. The figures revealed that a large majority of the deaths and injuries was clearly due to the lawlessness and disorder permitted in these cities. The corollary was also clear that the city governments were responsible for these deaths and injuries inasmuch as they could be prevented by the enforcement of restrictive or prohibitive ordinances. That report seemed to touch local pride; the press generally began publishing THE JOURNAL'S statistics, naturally emphasizing the figures of the local city and state; civic and other organizations started campaigns for the suppression of fireworks and the

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encouragement of other methods; city councils and officers were stimulated to action, and since that year the progress for better methods of celebration has been remarkable.

SIGNIFICANCE OF THE CHANGE

The watchword of this country is individual liberty, and this was heralded to the world by the Declaration of Independence, the signing of which is celebrated, July 4. The manner in which this day has been celebrated is, therefore, a fair index of other tendencies in our national life. From the beginning the individual was left free to show his patriotism on July 4, just as he was given the largest freedom in religion, in business and in the other walks of life. Too much freedom led to abuses in the business world, even as too much liberty led to disorder and lawlessness in the celebration. The nation has had to learn that the greatest liberty to the greatest number demands that certain bounds be placed to the liberty of the individual. Only a few years ago there seemed to be many evils due to greed, political favoritism and special privilege, such as to threaten the very continuance of our government. Within the last few years, however, much publicity has been given to political and commercial trickery in high places and low, and as a result we see a decided trend toward better things.

The use of fireworks in the celebration of the nation's birthday undoubtedly began as a sincerely patriotic demonstration, and celebrators were left free to do as they chose. This liberty became more and more abused, however, until the celebration had degenerated into an annual orgy of lawlessness, rowdyism, noise, death and destruction. So fixed had become the habit of celebrating with fireworks, and so general had become the freedom of their use, that even babes were suffered to handle matches and fireworks so often deadly even to adults trained to use them. Worse and worse grew this pseudo-patriotic orgy until it was annually demanding a toll of hundreds of children to be tortured by lockjaw, burned to death or otherwise slain, and thousands of others were blinded, maimed for life or otherwise injured. So settled was the nation in this annual debauch as to require the awful results to be given publicity time and time again through six long years before any appreciable check could be put to these crimes being committed annually in the name of patriotism! But as in other walks of life progressive citizens are successfully struggling for civic, state and national righteousness, so these forces are also making effective use of the statistics collected by THE JOURNAL and successfully striving to bring in a safer, more dignified and more truly patriotic celebration of the Fourth of July.

THE SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS

In reviewing the Seventeenth International Medical Congress, one is first impressed with wonder at its stupendous size. No fewer than twenty-five separate governments sent official representatives, and between seven thousand and eight thousand members attended. Of these it is worthy of note that quite a considerable proportion were women, about eighty of them from English-speaking countries. This fact marks a significant change that has come over professional opinion since the time when the Congress last met in London, in 1881. On that occasion the Executive Committee decided to issue invitations to men only, with the result that "forty-three duly qualified medical women" entered a protest, drawing on themselves the following rebuke from the *Lancet:* "It is well to bear in mind that the Congress is a voluntary assemblage of medical men for a certain purpose, and that those who are not asked to join suffer no infringement of their rights."

Another comment by our estimable contemporary of that date which touched us more nearly, was the remark that almost the whole of the work in the pathological section was done by German, French and English members, "while the Americans, who were present in large numbers and took an active part in the work of other sections, furnished only a single short communication, so little is pathology even yet studied by American doctors." That stricture, if correct at that time, could certainly not be leveled against the American profession of to-day, for beside those who actually read papers or took part in the proceedings of the Sections of Pathology and Bacteriology—among whom are to be found Yandell Henderson, MacCallum, Warthin, Folin, H. Dakin, and Duval—were many physicians in the various sections whose pathologic work is well known.

A feature of great and encouraging interest in connection with the Congress was the large amount of space devoted by the leading daily newspapers, particularly the *Times* and the *Morning Post*, the *Daily Telegraph* and the *Standard*, to fairly accurate reports, not only of the social aspects and the principal addresses and burning topics, but even to the section work generally, at any rate in regard to such matters as could conceivably be deemed of public interest.

Particularly is it gratifying to note that at last the "conspiracy of silence," which has for so long prevailed over all attempts on the part of the profession to arouse the public mind to the venereal peril, has been overcome; and the important resolution passed by the Congress has been not only widely disseminated, but also commented on and generally approved. That resolution, after calling attention to the ravages caused by syphilis, urges the governments of all the nations represented at the Congress to institute confidential notification of syphilis to a sanitary authority, and to make systematic provision for the diagnosis and treatment of all cases of syphilis not otherwise provided for. It is also gratifying to learn on good authority that so far as the British government is concerned, it has acquiesced in the proposition, as was indeed foreshadowed in Lord Morley's speech at the government dinner to the Congress.

Yet another auspicious feature of the Congress was the greater extent of official recognition than has hitherto

been accorded to such gatherings, in the dinner given by the government to the more eminent representatives of the Congress, at which Lord Morley, a high government official, speaking on behalf of the government, dwelt on the relations between the state and the medical profession, regarded as a potent factor in shaping public policy. He especially recognized the powerful influence that can and ought to be wielded by those attending the Congress toward the establishment of international amity and the suppression of those jealousies, fears and misunderstandings which imperil the peace and prosperity of nations.

While so many points mark progress in a proper estimation of the ideals of the medical profession, in one point at least there is a striking similarity between the conditions surrounding the two congresses. In 1881, as now, misguided persons were vigorously attempting to check the progress of medicine and science by restrictive or prohibitory legislation against experiments on living animals. Then, as now, men of practical knowledge pointed out clearly the actual benefits that had been derived from such experiments and indicated the deadly blow to all progress in medicine that the success of such attempts would entail. But how much greater, how much more overwhelming, is the mass of accumulated evidence that can be adduced to-day of the continuous stream of benefit to the human race—aye, even to animals—that has flowed, and is flowing, from animal experimentation. The cautionary remarks of Lord Morley at the government dinner, August 5, in which he referred to "the strong opinion prevailing in this country against experiments on living animals" was countered the next day, when Sir Ernest Schäfer, professor of physiology at Edinburgh University and president of the Section on Physiology, submitted the resolution which was there carried unanimously and subsequently endorsed at the closing meeting of the entire Congress:

> Experiments on living animals have proved of the utmost service to mankind in the past and are indispensable to its future progress, and accordingly, while deprecating the infliction of unnecessary pain, it is of opinion, alike in the interests of man and of animals, that every facility should be given to competent persons for the performance of such experiments under adequate supervision.

Not only this, but Harvey Cushing's brilliant address in surgery contained a well-reasoned and vividly illustrated argument and an emphatic protest against restrictive legislation which would seriously impede, if it did not entirely arrest, the progress of medical knowledge.

Finally, as to the hospitality accorded by our confrères of the British Empire to their guests and colleagues, it cannot be more suitably expressed than in the words used by the permanent commission in its report, "that it surpassed all expectations."

THE THERAPEUTIC RANGE OF SALVARSAN

It is not the intention now to discuss the therapeutic effects of Ehrlich's salvarsan and neosalvarsan in syphilis. Experience has shown that even under the most favorable conditions a *therapia magna sterilisans* cannot be secured uniformly in this disease by means of one or two injections of the remedy. Because high expectations were allowed to arise this partial failure of salvarsan to reach the utmost theoretic therapeutic ideals has had a tendency to create doubt in some persons as to the ultimate success of remedies built up experimentally in the way that salvarsan was produced. It will require years of experience and observation before the accurate range and limits of action of salvarsan and neosalvarsan in syphilis—the special indications, the limitations and the dangers—are established fully, and though they may fall short of what was hoped of them in syphilis, it always should be kept in mind that salvarsan does effect what must be accepted as a complete *therapia magna sterilisans* in certain human diseases. This is true of recurrent fever which is caused by a variety of spirochete. In a few hours after the injection of salvarsan the parasites disappear from the blood and crisis occurs followed by prompt recovery without recurrence. It is true also of frambesia or yaws, the tropical disease which resembles syphilis and is caused by a spirochete. Here a single injection is usually enough to cause a complete cure. In Surinam a hospital which usually cared for about three hundred patients with frambesia has been closed because of the rapid cure thus produced. In view of what actually is accomplished in the way of rapid and complete sterilization in these human infections there is no room for doubt and distrust of the possibilities of Ehrlich's method. And it does not seem likely that the therapeutic range of salvarsan is limited to syphilis, recurrent fever and frambesia. Numerous infectious diseases of different nature are said to be favorably influenced by its use (scarlet fever, small-pox, glanders, etc.), but no final conclusions can be based on the observations now at hand. Vincent's angina and other lesions due to oral spirochetes appear to be cured rapidly by salvarsan; in some cases local applications are sufficient. Aleppo boil and other diseases caused by organisms of the Leishmania group are also said to yield to salvarsan, and recently its use in amebic dysentery has been followed by strikingly favorable results (Hata,[1] Wadhams and Hill[2]); but here also further trials are necessary before any final judgment can be pronounced. There seems, then to be good reasons for the evidently increasing interest in what salvarsan and neosalvarsan may do in other diseases than syphilis, and if the therapeutic powers of these agents, the first finished product of the method used by Ehrlich in their discovery, are such as indicated, what shall we think of the further possibilities of the method itself?

1. Hata: Quoted by Ehrlich: Chemotherapie, Vortrag, Oct. 24, 1912.
2. Wadhams, S. H., and Hill, E. C.: Three Cases of Ameblc Dysentery Treated with Salvarsan, THE JOURNAL A. M. A., Aug. 9, 1913, p. 385.

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THE ADMINISTRATION AND VALUE OF TETANUS ANTITOXIN

The growing practice of giving tetanus antitoxin for curative purposes by the intraspinal route receives increasing support from both the statistical and the experimental sides. Numerous observers have corroborated the findings of Meyer and Ransom and others that the tetanus toxin is absorbed from the infected wound along the nerves, and spreads into and through the spinal cord by direct extension. Toxin traveling along the nervous tissues is not readily neutralized by antitoxin in the blood, but antitoxin in the spinal fluid can meet the toxin in the nerve roots, and probably in the cord itself. A series of interesting studies by Permin[1] establishes these facts and adds some new ideas. He found that animals given large doses of tetanus antitoxin, and then injected into a muscle with three or four times the ordinary lethal dose, develop a local tetanus from the excess toxin which passes along the nerves and reaches the regional segment of the spinal cord without being neutralized. Intraspinal injection of antitoxin can prevent the passage of the toxin into the cord, and thus prevent the local tetanus. As others have done, Permin attributes the universal tonic spasm of general tetanus to multiple ascending spasms; but the convulsions he ascribes to irritation of the cerebrum, on the basis of experimental evidence obtained from decerebrated animals, and by intra-ocular injection of the toxin.

Antitoxin circulating in the blood after subcutaneous or intravenous injection has no demonstrable power to abstract tetanus toxin from the nervous tissue, and hence is powerless to prevent the action of this toxin. All that antitoxin can do is to saturate the toxin being formed in the site of infection before it has entered the nervous tissues, and thus prevent in some cases the absorption of the fatal dose. When present in the spinal canal the antitoxin can also neutralize the toxin which is being carried into the cord from the nerves, thus interrupting the poison before it reaches the place where its harmful action is developed. The prophylactic use of antitoxin depends on the binding of the toxin before any toxic quantity can be absorbed by the nervous tissues, and apparently is not associated with any considerable effect on the infection, in view of the reported cases in which a delayed tetanus has been observed after prophylactic use of antitoxin, presumably arising after all the injected antitoxin has been eliminated or neutralized. From the results of experimental studies, which are supported by such statistical evidence as is obtainable, the proper curative treatment in a case of actual tetanus should consist, in addition to radical cleansing and extirpation of the infected tissues and symptomatic sedative treatment, of the use of maximum quantities of tetanus antitoxin by both intraspinal and intravenous or subcutaneous routes—the former to block the passage of antitoxin from the nerves into the spinal cord, the latter so to saturate the blood and tissues with antitoxin that no more unbound toxin can enter the nerves. Patients so treated, who have not already a fatal quantity of toxin in their spinal cords, should recover in most if not all cases.

Statistics on the use in Denmark of tetanus antitoxin for curative purposes, largely by the simple subcutaneous route of administration, give encouraging results, which would probably be even better if the more vigorous methods were employed. Of 199 patients treated without antitoxin there were 21 per cent. of recoveries, while in 189 cases of quite similar incubation period in which antitoxin was given, 42.3 per cent. of the patients recovered. It is especially noteworthy that in the acute cases with an incubation period of less than ten days, which have a notoriously bad prognosis, ninety-two patients treated with antitoxin showed 27.2 per cent. of recoveries, while of ninety-four untreated patients only 5.3 per cent. recovered. If tetanus antitoxin has so much influence on mortality when it simply limits absorption from the wound, its effect will undoubtedly be much greater when it is also used to block the progress of the toxin already absorbed. In any case, the results of these and many other statistical studies leave no room for doubt that tetanus antitoxin is well worth while as a curative agent in developed cases. In its use as a prophylactic agent it must always be kept in mind that tetanus antitoxin does not remain long in the body; Ruediger[2] found that in guinea-pigs the protective influence is lost in three weeks, while Vaillard[3] states that in man it lasts but one or two weeks. Hence, in those cases in which complete removal of the infecting bacilli cannot be assured, a repetition of the injection is necessary. Cases of tetanus developing some weeks after prophylactic use of antitoxin are occasionally observed, and are undoubtedly due to neglect of this precaution.

1. Permin, Carl: Tetanusstudier. Experimentelle og kliniske Undersögelser over Stivkrampens Pathogenese og Therapi, Habilitation Thesis, Copenhagen, 1912.

2. Ruediger: Bull. Manila Med. Soc., June, 1911.
3. Vaillard: Bull. de l'Acad. de méd., Paris, 1908, lxxii, 581.

WHAT IS A DIABETIC FOOD?

In another column we refer to the report on diabetic foods just issued by the Connecticut Agricultural Experiment Station. A discussion of these products naturally raises the question of "standards" and definitions, among the complicated meshes of which the unscrupulous may dodge just dietary demands even if they do not directly violate legal requirements. Naturally in this connection the question arises: What constitutes a "diabetic" food? Street and Mendel[1] point out that formerly an almost complete absence, or at least a marked reduction of carbohydrate was considered an essential characteristic of a true "diabetic" food. The advertising literature and labels of the manufacturers

1. See Footnote 2, p. 689, this issue.

of food products sold specifically for diabetics almost without exception foster the belief that their preparations, if not entirely free from carbohydrate, are at any rate far lower in carbohydrate content than are ordinary foods of the same class. Some manufacturers have more recently taken advantage of the fact that certain practitioners of recognized authority sanction the temporary liberal use of starchy foods like oatmeal, potato or rice for the very special purpose of increasing carbohydrate tolerance, to intimate the desirability of having a certain amount of starch in diabetic foods. This is at best a poor excuse for a low-grade product: for there is in truth no occasion to purchase special foods for the diabetic if the problem at issue is merely one of an insignificant reduction in the carbohydrate intake. The mere curtailment of the amount of ordinary bread or cereal eaten will accomplish the same end without dietetic discomfort. Furthermore, the sole guide which the purchaser at present has in the selection of brands of diabetic foods is the occasional indication of their protein content. High protein is by no means necessarily coincident with low carbohydrate. A product may be two-thirds protein and still contain 30 per cent. of objectionable carbohydrate, whereas a competing product may have the non-protein deficit made up completely of desirable fat. The physician and the patient are to-day utterly at a loss to know the true carbohydrate content of most of the foods offered to them. In fact, so great has this uncertainty become, that many leading practitioners have abandoned the use of all special preparations, preferring greatly reduced allowances of staple products like ordinary bread, of which the carbohydrate content is known and subject only to slight variations.

Street and Mendel insist that when a manufacturer offers a preparation as particularly suited for the use of diabetics, he removes that product from the category of ordinary foods and assumes new obligations to the consumer. The conditions surrounding its sale must necessarily be more exacting than for an ordinary food sold for ordinary purposes. They therefore propose that the following restrictions should apply to any preparation sold specifically as a "diabetic" food: 1. It should contain much less carbohydrate than is found in a normal food of the same class—certainly not over half as much. 2. The label should bear a correct statement of the percentages of protein, fat and carbohydrates present. 3. The amount of the different carbohydrates present should be declared on the label, that is, starch, sucrose, levulose, lactose, etc. 4. The processes of manufacture should be so standardized that uniformity of composition, within reasonable limits, will be maintained from year to year. 5. No statement should be placed on the label which would give the impression that any food in unlimited quantity is suitable for a diabetic patient. 6. In the advertisements of these foods emphasis should be put on the carbohydrate content rather than on the amount of protein present.

Unless something is accomplished in the near future in the way of following some or all of these suggestions, which seem both reasonable and logical, so-called diabetic foods must remain the object of uncertainty and suspicion and likewise fail, as a class, to appeal to discriminating physicians and well-advised patients as having any special therapeutic virtues. It is further particularly to the interest and advantage of the few producers of satisfactory products to protect themselves from the undeserved suspicion which their unscrupulous competitors force on them by a sort of legalized indifference and fraud.

Current Comment

COMMERCIALIZING THE INTERNATIONAL CONGRESS

The Seventeenth International Congress of Medicine has come and gone. As in all such cases, the congress itself and the exhibit held under its auspices will be used as advertising assets by firms and individuals who feel the need of something in that line. A letter (third-class mail) has been received addressed to "Monsieur le Docteur Directeur de THE JOURNAL of the American Medical Association." Enclosed were five sheets of thin paper each one of which bore the caption "17e Congrès international de Médecine, Section de Chirurgie, soussection d'Orthopédie." Each sheet—written in French—detailed the part that Monsieur Mencière of Reims played in the section of orthopedic surgery, describing as he did by means of wall charts (*planches murales*) his technic of "phéno-puncture" in "coxalgie douloureuse." Reference is also made to Mencière's "auto-modeleur à pression pneumatique," a piece of apparatus that the gentleman doubtless wants brought to the attention of the profession of medicine the world over. A thirst for publicity that inspires a physician to send broadcast to the medical journals of the world a synopsis of his remarks at a scientific meeting is so frank, so ingenuous, so childlike, that it disarms criticism.

LATER: As we go to press we have received one more letter—still third-class mail—from Dr. Mencière. This informs us that on Aug. 6, 1913, at 3 o'clock, the gentleman described his operative technic by means of stereopticon slides (*avec projection*) before the Orthopedic section of the International Congress!

VERRUCA TRANSMISSION

A preliminary communication from Peru[1] has brought a suggestion that may solve the problem of verruca transmission. Dr. Townsend, who is engaged in the study of the Peruvian disease at Chosica, Peru, has come to the conclusion that a theory of tick transmission is at present untenable. The investigation of the distribution of various bloodsuckers occurring in the verruca zone must take account of the peculiar distribution of the disease, which is said to be confined to deep and narrow canyons, with much vegetation, heat, and little or no

1. Townsend, C. H. T.: A Phlebotomus the Practically Certain Carrier of Verruca, Science, 1913, xxxviii, 194.

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ventilation. It appears that the habits of *Phlebotomus* correspond minutely with the conditions of verruca occurrence and the verruca zones. The flies find ideal conditions for their breeding in the verruca canyons. They suck the blood of almost any warm-blooded animal and thus are quite independent of man. This accords with the verruca reservoir being located in the native fauna. Dr. Townsend announces his confident belief that the transmission experiments, now about to be initiated with these gnats on laboratory animals, will demonstrate their agency in the transmission of the disease. We expect shortly to publish a report by Townsend of these experiments.

A REPORT ON DIABETIC FOODS

The subject of diabetic foods is one which THE JOURNAL has discussed at various times in the past in the hope not only of furnishing reliable guidance to those physicians who are interested in the management of diabetes, but also of awakening a much needed reform in the character of the manufactured products sold as diabetic foods. The subject is of vital importance to diabetics and to physicians who want to treat these unfortunates in a scientific manner. A while ago we published a brief preliminary survey of the diabetic foods on sale in the United States.[1] The detailed report, prepared by J. P. Street, chemist of the Connecticut Agricultural Experiment Station, and Lafayette B. Mendel of Yale University, has now appeared.[2] We do not know of any work done on this subject which compares in thoroughness and usefulness with this detailed report from the Connecticut Agricultural Experiment Station. Every physician who is interested in the subject of flours and foods having, or supposed to have, a low carbohydrate content, and certainly every physician who has a diabetic patient, should send for it.

CORPUS LUTEUM AND MAMMARY GLAND

It has been well established that the mammary glands may begin to hypertrophy during pregnancy after complete division of all the possible nervous paths between them and the tissues more directly involved in the developmental changes, namely, the ovaries and uterus. Starling and Lane-Claypon demonstrated that a somewhat similar mammary hypertrophy may be found in virgin rabbits after the injection of watery extracts made from fetal rabbits. This observation forms the basis for the current "hormone" theory regarding the initiation of growth in the mammary glands during pregnancy, for it points clearly to the fact that a chemical substance—a hormone—produced in the fetus and transmitted through the placenta to the maternal blood-stream may become an essential factor in the initiation of mammary development before lactation. This fetal hormone is not the only factor involved in the growth of the mammary gland. Bouin and Ancel[3] have furnished evidence that the corpus luteum—the tissue produced when a follicle of the ovary is ruptured and an ovum discharged—may also be concerned in the development of the mammary gland and lead to its hypertrophy quite independently of the presence of actual products of conception in the uterus. The rupture of ripe follicles can often be induced by purely mechanical or artificial means. The French investigators have shown that this is ordinarily followed by the formation of corpora lutea and also by a growth of the mammary glands. Recent experiments of O'Donoghue[4] in the main confirm this interesting finding of Bouin and Ancel. They further provide a valuable piece of negative evidence. According to O'Donoghue, the rupture of the follicles is not invariably attended by the formation of corpora lutea. When the formation duly occurs there is also a growth of the mammary glands. In rabbits, the amount of growth in fourteen or fifteen days was about equal to that of the normal pregnant female of twelve days. On the other hand, if the follicular rupture is not succeeded by the formation of corpora lutea, then no growth of the glands ensues even though the operative procedures have been precisely the same in the two cases. These facts serve to lend new emphasis to the dependence of such physiologic responses as mammary development on other than purely nervous relations. They add to the coming significance of hormone activities in the interdependence of various parts of the organism.

ENCOURAGEMENT

The attempt of a philanthropic gentleman in the coal business to enrich—for a consideration—the armamentarium of physicians is discussed briefly in the Propaganda for Reform department. The thing itself is but a trivial episode in contemporaneous quackery, yet the matter has been one of special encouragement. Had this same scheme been worked six or eight years ago, it is doubtful whether half a dozen physicians would have taken the trouble to bring the matter to THE JOURNAL'S attention. To-day, apparently as a matter of course, more than half a hundred wide-awake members of the profession, in one state, immediately bring this attempt to exploit the doctor to the notice of their own journal. Such spontaneity of action is decidedly encouraging.

HAPGOOD RUNS TRUE TO FORM

The aforetime readers of *Harper's Weekly*—the oldest illustrated weekly newspaper in the country—will hardly recognize it under its new ownership and editorship. The change is radical; everything is new but the name: typography, make-up, arrangement—all are different, and better. But the greatest difference is in the character of its contents—and of course this might have been expected with Norman Hapgood as editor. *Harper's Weekly* is no longer mainly political; it is so only incidentally. As its subtitle has already had it, it is indeed again "a journal of civilization"; or probably it

1. Street, J. P.: Diabetic Foods Offered for Sale in the United States, THE JOURNAL A. M. A., June 28, 1913, p. 2037.
2. Street, J. P., with the assistance of Mendel, L. B.: Diabetic Foods, Report Conn. Agric. Exper. Sta., Food Products and Drugs, 1913, Part 1, Section 1. This report is available free to those who apply to the Connecticut Agricultural Experiment Station, New Haven, Conn.
3. Bouin, P., and Ancel, P.: Sur la fonction du corps jaune, Compt. rend. Soc. de biol., 1909, lxvi, 605, 689.
4. O'Donoghue, C. H.: The Artificial Production of Corpora Lutea and Their Relation to the Mammary Gland, Jour. Physiol., 1912, xlvi, 6.

would be better to say "*for* civilization." This comment, however, is mainly to call attention to, and to quote from, one item in the initial number under Mr. Hapgood's editorship. After referring to the many letters that the editor had received asking that "both sides" be given in the vivisection controversy, and stating that if a course hostile to the antivivisection crusade were pursued the writers would not subscribe, *Harper's Weekly* says:

> We have no intention of giving both sides. On the contrary, the support of the cause of scientific medical progress will be one of the things to which we shall be energetically devoted. We shall no more give both sides of the argument on experiment than we shall give both sides of the question of whether the household fly shall be encouraged in the dining-room, or sewers emptied into the city reservoir, or swamps kept for the breeding of mosquitoes, or small-pox patients permitted to ride on the street-cars. We shall be extremely bigoted on the subject, and shall hope that the day will soon come when cancer will be added to the great diseases that have yielded to investigation.

We congratulate Mr. Hapgood on the fact that he has the courage of his convictions and is not afraid to express them. Also, we congratulate him on the various good things he has introduced into this *new* journal published under an old name.

Medical News

ALABAMA

Hospital Cornerstone Laid.—The cornerstone to the addition to the Hillman Hospital, Birmingham, was laid with Masonic rites, August 26.

Hospital Addition Completed.—The addition to the Mobile City Hospital which will accommodate eighty patients, is nearly completed. The building is two hundred feet long and connected with the present hospital building by a corridor. On the ground floor an out-patient department and x-ray, clinical and anatomical laboratories are provided.

Personal.—Dr. Andrew H. Ryan, formerly professor of physiology and pharmacy in Washington University, St. Louis, and more recently assistant professor of physiology and pharmacy in the University of Pittsburgh, has accepted the professorship of physiology in the School of Medicine in the University of Alabama, Mobile. Dr. Howard H. Bell has been appointed full-time assistant in the department of pathology and bacteriology in the university and Dr. Jesse P. Chapman, assistant instructor in orthopedic surgery in the institution.

CALIFORNIA

Personal.—Dr. L. L. Stanley has succeeded Dr. H. N. Kierulff as physician at the San Quentin State Prison and Dr. Francis Stolle, San Francisco, has been appointed assistant physician.——Dr. Charles T. Palmer, assistant health commissioner of Los Angeles, has resigned.

Hospital News.—Plans are being prepared for a new building to be erected for the French Hospital Association, College and Castellar streets, Los Angeles. The building is to be of reinforced concrete construction and will cost about $50,000. ——The supervisors of Marion County have authorized the construction of a county hospital building to cost $40,000 and to accommodate seventy-five patients. It will be of fireproof construction and will be located about four miles from San Rafael.——The contract has been signed for the construction of a hospital building for the Sisters of Mercy at Oxnard. The building will be 150 x 42 feet, of brick construction, two stories and a basement in height and will cost $42,000.—— Plans are being prepared for a group of buildings to be erected on Marengo Avenue, Pasadena, for the Marengo Avenue Hospital. The main building will be a four-story reinforced concrete structure.

GEORGIA

Appropriation for Medical Department.—The legislature of Georgia has decided to give the medical department of the university, Augusta, an appropriation of $30,000 a year for the next two years, and the governor signed the bill providing for this, August 20.

ILLINOIS

Advisory Committee Appointed.—President McCormick of the Cook County Board of Commissioners has appointed a committee of experts to visit the tuberculosis institutions in Cook County and report as to conditions found and suggest means of improvement. The committee consists of Dr. Theodore B. Sachs, chairman; Drs. Stephen R. Pietrowicz and Ethan A. Gray and Mr. James Minnick.

Civil Service Examination.—The State Civil Service Commission announces that examinations will be held September 6 at various points in the state for general physician, class A, grade II, salary of $75 to $125 a month and maintenance, open to men and women between the ages of twenty-one to fifty. This examination is open to non-residents of Illinois; and for hydrotherapist at the Kankakee State Hospital, class B, grade II, salary of $60 to $75, open to persons over twenty-one years of age and local residence is waived. Application for above examinations and requests for information should be addressed to W. R. Robinson, chief examiner, State Civil Service Commission, Springfield.

Personal.—Dr. H. Lewis Pintler, Peoria, who has been critically ill in Chicago, is reported to be improving.——Dr. Emil Haass, Frankfort, celebrated his eighty-sixth birthday anniversary August 5.——Drs. J. Sheldon Clark, Freeport, and Carroll B. Welton, Peoria, sailed for Europe, August 9.——Dr. Joseph Cooperstein, Chicago, has been appointed assistant physician at the Chester State Hospital, vice Dr. William Hersio. ——Dr. T. McLain, assistant physician at the Peoria State Hospital, has been transferred to the Jacksonville State Hospital, vice Dr. Walter Treadway, resigned, to enter the U. S. P. H. Service.——Dr. E. W. Fell, Jacksonville, has been appointed assistant physician at the Elgin State Hospital, vice Dr. E. J. Kelloch, resigned.——Dr. J. S. Thrailkill, Bethalto, was seriously injured when his automobile went over a thirty-foot embankment in Alton, August 15. One leg was fractured and he sustained serious cuts and bruises.——Dr. Joseph M. Campbell, Marissa, has been appointed superintendent of the Watertown State Hospital.——Dr. J. L. Aleshire, Plainsville, was operated on for appendicitis recently and is reported to be doing well.——Dr. Russell V. Thomas has been appointed local surgeon for the Illinois Central Railroad at Manteno vice Dr. Zephrita Rouleau, deceased.——Dr. Andrew M. Harvey has moved his residence to La Grange, Ill.——Dr. and Mrs. Herman L. Kretschmer have sailed for Europe.

Chicago

Baby-Saving Campaign.—The Civic Federation of Chicago, in the hope of reducing the infant mortality rate in the city, has commenced a campaign of education by means of posters, urging mothers in the crowded wards of the city to "Keep Your Baby Well," and giving the addresses of the nearest Infant Welfare Society stations and the Elizabeth McCormick Baby Association at which free advice and care is given to all mothers.

INDIANA

Bequest to Hospital.—The Methodist Episcopal Hospital, Indianapolis, which at the present time is erecting its second annex, will benefit to the extent of two hundred acres of valuable land from the will of Simeon Smith, who recently died, near Bloomfield.

New Hospital.—The Elkhart General Hospital, erected at a cost of $80,000, was opened to the public, July 26-27, with a reception given by the board of directors and the officers of the Elkhart Training School for Nurses. During the two days five thousand residents of Elkhart and vicinity visited the school.

Hospital Improvements.—The Long State Hospital and the two units of the new Indianapolis city hospital will be ready for occupancy this fall. These buildings in connection with the annex of the Methodist Episcopal Hospital and the new St. Vincent Hospital will give Indianapolis ample hospital facilities for several years.

County Sanatoriums.—A hospital for the treatment of tuberculosis will be erected in South Bend, Indiana, at a maximum

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cost of $50,000. Thirty acres of land necessary to complete it have been condemned by the county commissioners and a board of four members, two of which must be physicians, will be appointed to supervise its erection.

Receiver Named for Sanatorium.—On application of the Pittman and Myers Company, manufacturing pharmacists of Indianapolis, Judge Brill has appointed a receiver for the Rockwood Tuberculosis Sanatorium, located six miles east of Danville; under bond of $25,000, with instructions to operate the institution until the property can be sold to an advantage.

IOWA

New Officers.—Fort Madison Clinical Society; president, Dr. J. R. Walker; secretary, Dr. J. G. Rea.

Personal.—Dr. S. C. Dunkle, Glidden, was operated on in Rochester, Minn., August 13, and is reported to be doing well. ——Dr. C. B. Burk, Atlantic, is said to be seriously ill with typhoid in Mercy Hospital, Council Bluffs.——Dr. Henry G. Langworthy, Dubuque, was operated on recently at Mercy Hospital for appendicitis.——Dr. O. W. Lowrey, Des Moines, was seriously injured by the overturning of an automobile near Oskaloosa, recently.——Dr. H. H. Nichols, Marshalltown, who underwent a serious operation at St. Thomas Hospital, recently, is reported to be convalescent.

KANSAS

Advisory Committee for State Board Named.—B. L. Thompson, a butcher, of Harrington, James Campbell, a candy maker of Salina, and W. F. Jackson, Fort Scott, of the Bourbon County retailers, have been appointed advisory members of the State Board of Health to represent the merchants of the State and to aid the board especially as regards pure food matters.

KENTUCKY

Bacteriologic Exhibit for County Fair.—The assistant state bacteriologist is preparing a bacteriologic traveling case of exhibits of local conditions for the county fairs of the state. The exhibit is for educational purposes only and is accompanied by similar cases prepared by the Experimental Station.

MARYLAND

Baltimore

Personal.—Drs. J. L. Hooper and Robert Hoffmann have sailed for Europe.——Dr. A. L. Felsenfeld has been appointed medical examiner of schools, vice Dr. I. F. Page.

Purification of Drinking Water.—The health authorities are using three thousand pounds of hypochlorite of lime daily, with a view of purifying the drinking water of the city and limiting the prevalence of typhoid fever. A report shows that 99 per cent. of the bacteria in the water last year were killed by the use of hypochlorite of lime.

NEW YORK

Large Contributions to Tuberculosis Fight.—It has been announced by the State Charities Aid Association that gifts to aid the campaign against tuberculosis totaled $630,500, the largest contribution having been made by the late Mrs. Elizabeth M. Newton of Fredonia, N. Y., who bequeathed $150,000 for the purpose of founding a hospital for consumptives in Chautauqua County.

Violent Deaths in June.—There were 473 violent deaths in the state during June. Of these, 146 were from drowning, 145 died in railroad accidents, 116 were suicides, 44 were murdered, 12 died by electric shock, 7 from sunstroke and 3 were killed by lightning. June had 10,865 deaths, an average of 362 daily; of the uncommon or infrequent causes of death, 9 were tetanus and 6 from poliomyelitis.

Cottage Settlement for Consumptives.—Mrs. Thomas F. Ryan has purchased a 100-acre farm near Sloatsburg, Rockland County, where she proposes to establish a colony for the consumptives of that county. The site was recommended by Dr. Herman Biggs, and the buildings will be begun at once. The first object of the home is to provide for the consumptives of Rockland County but it is understood that if those from elsewhere knock for admission they will not be refused.

The State Health Department and Sex Hygiene.—In connection with the new work of the State Health Department in teaching sex hygiene circulars have been prepared and are being circulated entitled "Sexual Hygiene for Young Women," "Sexual Hygiene for Young Men" and "Suggestions to Persons Having Venereal Diseases." The work is carried on principally by lectures and exhibits. It is proposed to reach girls working in industrial establishments. In view of the increasing prevalence of cancer in this state and the fact that cancer so often attacks one or more of the sexual organs of the female, it is proposed to include in the educational campaign some lectures dwelling on the early diagnosis, means of prevention and necessity for early skilled treatment of cancer. In this phase of the subject the State Health Department will have the cooperation of the New York State Cancer Laboratory.

New York City

Personal.—Dr. and Mrs. Henry W. Mooney and Dr. and Mrs. C. E. Scofield, Brooklyn, have sailed for Europe.——Dr. Henry Mann Silver is rapidly convalescing from an operation for the removal of gall-stones, recently performed in Roosevelt Hospital.

Lower Death-Rate Among Babies.—For the week ended August 16 there were only 170 deaths of infants under one year, as compared with 194 for the corresponding week of 1912. The city has now passed the middle of August with a record of 309 fewer deaths than had occurred up to the same time last year.

To and From Europe.—Among those who have returned from Europe recently are Dr. and Mrs. Hermann M. Biggs, Dr. and Mrs. George E. Brewer, Dr. and Mrs. Howard C. Taylor, Dr. Richard H. Gibbons, Dr. Charles Ogilvy, Dr. Philip Van Ingen, Dr. and Mrs. Philip Embury, Dr. and Mrs. Fred H. Albee and Dr. H. G. Anderson. Among those who have sailed for Europe recently are Dr. and Mrs. S. Wells Churchill, Dr. H. Bayard Clark and Dr. William M. Ford.

Court Upholds Vaccination Law.—In the case of Hagbard Ekerold who refused to keep his child in school unless the board of education assured him that the child would not be subjected to vaccination, Judge Rosalsky of the general sessions court upheld a fine of $5 which had been imposed on the defendant by a police court and suggested that the case be carried to the higher courts in order to make a test case as to whether the action of the board of education on the subject of vaccination was in accord with the law.

Infant Deaths Increase in Three Boroughs.—Thus far for the year 1913 there have been 208 fewer deaths among babies than during the same period of 1912. During the week ending July 26 there were 53 fewer deaths among infants than during the corresponding week of 1912, though there was a considerable increase in the death rate in three boroughs, Richmond, Brooklyn and Manhattan. Thus far this year there have been 131 deaths from diarrheal diseases as against 164 for last year.

Court Decides Against Smoke Ordinance.—In the case of the Board of Health against the New York Edison Company the court has decided that the Health Department has enforced the ordinance against the smoke nuisance "unreasonably and unconstitutionally." There is a widespread sentiment that this decision is unwise and that if the smoke nuisance cannot be regulated by ordinance it will have to be controlled by legislation. It is hoped that an appeal in the case in question will result in a reversal of the decision.

Rules Sent to Milk Dealers.—The Health Department has sent to all stores where dipped milk is sold a set of rules which require that milk shall not be sold or stored in rooms used for cooking or other domestic purposes, or in any room where there is a lavatory. Milk must be kept at a temperature of 50 degrees or lower at all times. Such rooms must be clean, well lighted and screened. Dry dusting or sweeping in a room where milk is sold is prohibited. Only such persons shall be employed as are free from diseases which may be transmitted.

New Health Regulations.—There will be two important changes in the old system of dealing with cases of diphtheria, scarlet fever and measles. Insusceptible persons will not be excluded from school while a case of infectious disease exists at home, provided isolation is properly carried out. Quarantine in cases of measles will be terminated five days after the appearance of the rash, if such a course is warranted by the clinical condition. Periodic visitations will be made by nurses, and, if the regulations are disobeyed, the patients may be removed to a hospital.

Summer Hospital Will Keep Open All Year.—At a meeting of the board of trustees of St. John's Guild recently, it was decided to keep the Sea Side Hospital at New Dorp, S. I., open during the entire year instead of during the summer months only. The new buildings and equipment have made

it possible to care for convalescent mothers who have been discharged from city hospitals and also to continue the treatment of orthopedic cases through the winter. Thus far this season 1,624 patients have been admitted to the hospital with an average stay per patient of 9.7 days.

Bequests.—The will of Mrs. Julia Lorillard Butterfield, the widow of General Daniel Butterfield, leaves about $350,000 to charitable and educational purposes of which the Association for the Relief of Respectable Aged Indigent Females receives $20,000 and the Association for the Aid of Crippled Children, $10,000. A bequest of $40,000 is made for the erection of a hospital in Cold Springs, N. Y., $40,000 is left for its equipment and $100,000 for its maintenance.——The will of Henry Korn gives $500 each to the Lebanon Hospital, Mount Sinai Hospital, Beth Israel Hospital and Montefiore Home.

To Help Expectant Mothers.—Through the generosity of Mrs. Robert H. Sayre five lots on the shore of Oak Beach, L. I., have been leased where cottages will be erected which will furnish single rooms to 100 expectant mothers. The funds for the buildings have been donated by a woman who has requested that her name be withheld from the public at present. It is proposed to take the expectant mothers for a month and to give them good food, rest and instruction in how to care for their babies. The work done in this direction by the milk stations has reduced the infant death rate to such an extent that it is believed that such an institution will be a great factor in lowering infant mortality.

New Children's Court.—The cornerstone of a new court house for children was laid on August 9 when it was explained that in this building the suggestion of a court of law would be eliminated as far as possible. Only those directly interested in the cases will be permitted in the room. Boy and girl delinquents will be brought to the room through a separate entrance and care will be taken to segregate them. The court is to be regarded as an experiment station where delinquent children will fall into the hands of those who understand them. On the cornerstone is inscribed "For every child let truth spring from earth and justice and mercy look down from Heaven." Proper provision will be made for the examination and diagnosis of the cases, and after diagnosis, for proper treatment through probation, thorough investigation of home conditions, and when necessary for commitment.

NORTH CAROLINA

Resigned to Help Hospital.—In order to disabuse the public of the idea that the Mission Hospital, Asheville, is a close corporation rather than a public institution, the members of the staff and adjunct staff have resigned. The campaign to raise $100,000 for a new building for the hospital will now be carried on actively.

Personal.—Dr. J. V. McGougan, Fayetteville, entertained the members of the Hoke-Cumberland County Medical Society, their families and invited guests, in number more than one hundred, with an old fashioned barbecue at his country home "Skiboo Place," August 11.——Dr. C. B. Woodley, Kinston, has been successful in his case in the Superior Court which involved the right of the telephone company to discontinue telephone service of a physician without his consent.

PENNSYLVANIA

Insane Hospitals Must File Reports.—The attorney general's department has handed down an opinion that no payments of appropriations can be made to the state insane hospitals unless they file quarterly reports.

To Build Hospital Group.—A group of six buildings of one, two and three stories in height, to cover an area of 150 by 558 feet, in Westmoreland County, will be built for the Westmoreland Hospital for the Insane.

Typhoid Traced to Milk.—The State Department of Health has completed investigations at Chester and confirmed the opinion of the local health authorities that the outbreak of typhoid fever was due to infected milk.

Hospital News.—The erection of the proposed St. Mary's Hospital, South Scranton, has been postponed on account of the bids submitted being in excess of the sum planned and secured for the work.——Chester Hospital has secured a new motor ambulance, the $4,000 for the purchase of which was secured by public subscription.

Personal.—Dr. J. C. Price, Scranton, has been appointed chief medical inspector of the newly instituted department of labor and industry.——Drs. E. E. Lamb, H. E. Helling and C. M. Leman have been appointed directors of the Ellwood City Hospital Association.——Dr. John T. Eckert, Allentown, was seriously injured by the overturning of his automobile, August 5.

Hospital Notes.—The contract has been awarded for a two-story addition to the Hospital of the Good Shepherd Rosemont.——A free dispensary has been opened in connection with the Crozer Hospital, Chester.——The Coatesville Hospital has arranged a department for sick babies which will be opened by the first of October.——Reading has opened its isolation hospital for small-pox at Avon, July 21.

Philadelphia

Personal.—Dr. W. H. Blakesley has been appointed medical inspector in the State Department of Labor and Industry.——Dr. Milton B. Hartzell has succeeded Dr. J. F. Schamberg, resigned, as assistant diagnostician and consultant to the Municipal Board of Health.

Increase Medical Course.—The Jefferson and Medico-Chirurgical Colleges announced on August 19, that no person will hereafter be admitted to the regular medical courses who has not spent a year in obtaining a premedical education, to consist chiefly of collegiate biology, chemistry, physics and German.

City Eye Dispensary Established.—A branch of the eye dispensary which has been maintained in the City Hall by the Department of Health and Charities for several years, will be established at the Southwark School and will be in operation at the end of the summer vacation. Dr. William J. Ryan will be in charge of the dispensary.

Impure Food in Storage Plants.—The State Dairy and Food Commission, making an investigation of all cold-storage establishments preparatory to the enforcement of the Gans bill which went into effect August 14, found decomposed meat and other food products in great quantities. In one of the refrigerating plants approximately 1,000 pounds of decomposed meat was ordered destroyed.

Charitable Bequests.—The will of the late Mrs. Anna F. Francine makes provisional bequests of one-third of her estate which is valued at $130,000 to the University of Pennsylvania Hospital, and the other two-thirds to the trustees of the Pennsylvania Epileptic Hospital and Colony Farm in Chester County.——The will of the late Henry Freedman gives $500 to the Jewish Hospital.

Notice to Milk Dealers for Next Summer.—The rule that all milk and cream sold in this city must be pasteurized by a process approved by the Board of Health, in addition to meeting the requirements imposed on the milk traffic, goes into effect July 1, next. The reason for the delay in enforcing the rule is that a drastic change will be made in the handling of the milk under the new regulation and dealers must install equipment to carry out this rule.

To Prevent Typhoid.—On August 22, Chief Vogelson, of the Bureau of Health, sent a circular letter to factory owners, urging their cooperation in effectually and promptly stopping pollution of filtered water through raw water pipe connections on their premises, for fire protection or manufacturing purposes, as much of the increase in typhoid fever is believed to be the result of contamination of city water mains by such private raw water piping systems.

Legality of Vivisection to Be Settled.—In the fall, an effort will be made to settle finally the legality of vivisection, when six physicians of the University of Pennsylvania will be arraigned before the grand jury. The Women's Pennsylvania Society for the Prevention of Cruelty to Animals is supporting the prosecution. The accused physicians are Drs. Allen J. Smith, Edward T. Reichert, Alonzo E. Taylor, Joshua E. Sweet, Richard M. Pierce and Alfred M. Richards.

Summer Outings to Red Bank.—The two boats, The John F. Smith and the Elizabeth M. Smith, named after the donors of the free hospital and playground at Red Bank, N. J., make nine trips daily between that place and Philadelphia and carry about 600 women and children. These boats rechristened by the children, "The Johnny Boat" and "The Lizzie Boat," are rounding out thirty-six years of service and in that time have carried 3,456,134 persons from the tenements to Red Bank. There are all sorts of amusements for the children in the playground and luncheon is served about 11. Last summer 23,920 quarts of soup, 6,036 cups of tea, 3,566 quarts of milk and 98 barrels of crackers were dispensed. For babies too small to go into the bathing pools, there is a separate bathing house with twenty-two baby tubs and there are also tubs for the mothers. The hospital building is three stories high and accommodates eighty mothers and babies.

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Infant Mortality Increasing.—Despite the numerous public and private baby saving enterprises in operation during the summer, figures compiled by the Department of Health show a decided increase in infant mortality for the first six months of this year as compared with the same period in 1912. The following table shows the increase over last year:

Age at Death	1912	1913
Under 1 year	1,904	2,203
1 to 2 years	430	518
2 to 5 years	451	523
5 to 10 years	259	305
	3,044	3,549

The general increase in the rate of mortality under 10 years of age is ascribed by Dr. Neff to the epidemic of measles that was prevalent in the city during the winter. The department is maintaining or helping to maintain six agencies throughout the city whose sole purpose is saving the baby. These include the Baby Hospital on the Race street pier, the instruction camp on the Chestnut street pier, Children's Hospital at Blockley, the maintenance of eight municipal nurses for private visiting, the permanent baby show at City Hall and interest in the Babies' Hospital at Wynnefield.

Care of Milk Supply of City.—Director Neff of the Bureau of Health and Charities has issued a bulletin warning milk consumers to protect themselves against inferior and unclean milk. Some of the directions contained in the bulletin follow:

Cleanliness and cold are necessary to keep milk wholesome at home, as well as at the dealer's. Keep milk in the milk bottle, or container, covered, until wanted, and then pour out only as much as will be used at the time. Wipe the mouth of the bottle with a clean towel before removing the cap. Rinse the cap in running water before replacing it. If the cap is broken, place an inverted tumbler over the mouth of the bottle.

All dishes, containers and utensils used for milk should be kept perfectly clean, first by being rinsed as soon as emptied, or directly after being used, with cold water, and then being boiled in clean water and set away, unwiped, bottom up, to dry. They are kept in much better condition this way than when cleaned in dish water and wiped with the ordinary dish towel. Do not use milk jars for any other purpose than holding milk.

Keep milk in a separate compartment of the refrigerator. Milk absorbs unpleasant odors, as well as germs. Refrigerators should be kept clean and sweet; the outlet for melted ice should be properly trapped and the trap kept clean. Scald the food compartment of the refrigerator every week with a washing soda solution.

The following table shows the work of the health department for the first six months of the current year in looking after the city's milk supply.

Number of milk inspections		47,131
Number of quarts inspected		1,937,454
Number of quarts condemned and destroyed:		
On the street	1,692	
On the platform	11,241	12,933
Number of samples tested:		
Bacteriologically		2,095
Microscopically		1,061
Chemically		66
Milk licenses revoked		5
Cows inspected		3,299
Cows condemned		12
Farms and stables inspected		267
Pasteurising plants inspected		91

TENNESSEE

Malaria in Memphis.—The superintendent of the Memphis City Hospital reports that from Sept. 1, 1912, to June 30, 1913, 393 cases of malaria were received in that institution. Of these 146 were white males, 37 white females, 174 colored males and 33 colored females. Of the first class, 100 were reported cured, 41 improved and 4 unimproved with 1 death; of the second class, 26 were cured and 10 improved with 1 death; of colored males, 143 were cured, 29 were improved, 1 unimproved and 4 died, and of colored females, 24 were cured and 9 improved.

VIRGINIA

New Officers.—Piedmont Medical Society at Fredericksburg: president, Dr. Harry L. Baptist, Ivy Depot; secretary, Dr. F. G. Scott, Jr., Orange.——Old Dominion Medical and Surgical Society at Petersburg, August 12: president, Dr. Thomas J. Fawcett, Lynchburg; secretary, Dr. W. A. Crowder, Petersburg.

Personal.—Dr. F. P. Dickinson, Fredericksburg, was thrown from his buggy in a collision with another vehicle, recently, fracturing his clavicle.——Dr. H. A. Warren, Suffolk, was operated on recently at Lakeview Hospital.——Dr. A. G. Crockett, Wythesville, was seriously injured in a runaway accident at Fort Chiswell, recently.

City to Build Hospital.—A resolution was introduced recently in the board of aldermen of Richmond, directing the council committee on public buildings, properties and utilities to examine into the feasibility of erecting a new and modern city hospital on the State Home property. The present city hospital is said to be inadequate to the needs of the municipality.

GENERAL

Mississippi Valley Medical Association Meeting.—The thirty-ninth annual meeting of the Mississippi Valley Medical Association will be held in New Orleans, October 23-25, under the presidency of Dr. Albert E. Sterne, Indianapolis.

Electrotherapeutists to Meet.—The twenty-third annual meeting of the American Electrotherapeutic Association will be held at the Engineering Society's Building, 29 West Thirty-Ninth Street, New York City, September 2-4, under the presidency of Dr. F. Howard Humphris, London, England.

Ophthalmologic Congress.—The Oxford Ophthalmologic Congress was held at Keble College, Oxford, July 17-18. Addresses were delivered by Prof. Emil von Grosz, Dr. John O. McReynolds, Dallas, Tex., Dr. J. Igersheimer, Lieutenant Colonel R. H. Elliot, I. M. S., Dr. J. Mawas, Dr. Franz Deutschmann, Mr. N. C. Ridley, Dr. T. Harrison Butler and Dr. F. W. Eldridge-Green

Bequests and Donations.—The following bequests and donations have recently been announced:

Union Hospital, Terre Haute, Ind., $50,000 by the will of James McGregor.

Darrach Home for the Crippled, $5,000, State Charities Aid Association, New York, $1,000, donation by Charles H. Marshall, New York City.

Johns Hopkins Hospital, Baltimore, about $5,000 by the will of Albert A. McElroy of Washington township, Pa.

Railway Surgeons Meet.—The New York and New England Association of Railway Surgeons will hold its twenty-third annual meeting at the Hotel Astor in New York City, October 22. The address on "Surgery" will be delivered by Dr. Hugh H. Young, Baltimore. Dr. John W. Le Seur, Batavia, N. Y., is president and Dr. George Chaffee, 338 Forty-Seventh Street, Brooklyn, N. Y., the corresponding secretary of the association.

Lane Medical Lectures.—The fourteenth course of Lane Medical Lectures will be delivered in Lane Hall, San Francisco, on the evenings of September 3, 4, 5, 8 and 9 at 8 o'clock, by Prof. Sir Edward Schäfer, professor of physiology, University of Edinburgh. The several subjects are on "Internal Secretion in General," "The Thyro-Parathyroid Glands," "The Adrenal Glandular Apparatus," "The Pituitary Body," "The Influence of Internal on other Secretions," and "Methods of Resuscitation" (to be delivered at Stanford University, Cal.). The lectures will be illustrated by lantern slides.

Life Insurance Directors' Meeting.—The third annual meeting of the medical section of the American Life Convention was held in St. Paul, Minn., August 19, under the presidency of Dr. H. A. Baker, medical director of the Pittsburgh Life and Trust Company, Pittsburgh. The most important subjects discussed were the "Curve of Mortality" and the "Insurability of Women." The following officers were elected: chairman, Dr. James H. Stowell, Chicago, medical director United States Annuity and Life Insurance Company; vice-chairman, Dr. Whitfield Harral, Dallas, Tex., medical director Southwestern Life Insurance Company; secretary-treasurer, Dr. F. L. B. Jenney, medical director Federal Life Insurance Company, Chicago; board of managers, Drs. James H. Stowell, Chicago; Whitfield Harral, Dallas, Tex.; Ambrose Talbot, Kansas City; Frank W. Foxworthy, Indianapolis, and F. L. B. Jenney, Chicago. West Baden, Ind., was selected as the place for the mid-year meeting and Dallas, Tex., for the next annual meeting.

American Mine and Safety Association and American Mining Congress.—The annual meeting of the American Mine Safety Association will be held in Pittsburgh, September 22, 23 and 24, with headquarters at the Fort Pitt Hotel. The organization has been in existence less than a year. It was formed for the purpose of promoting safety for underground workers, miners and others. This is expected to be accomplished by recommending proper safeguards against accidents, approved appliances and methods of procedure in safety inspection, mine rescue work and first aid treatment, also by circulating information on these subjects and encouraging the miners and other underground workers to consider their own personal safety and that of their fellow workmen by the establishment of national first aid corps, such as St. John's Ambulance Corps of Great Britain. In 1911, 2,719 persons were killed in coal mines alone; 9,106 were seriously injured and 22,228 were slightly injured. Nearly an equal number were injured in metal mines and quarries. It will be seen that the organization of mine workers and operators and the promotion of everything that would conduce to the safety of men engaged

in these underground occupations is important. In recent years much attention has been given to providing safety appliances for mines. The American Mining Congress, which meets in Philadelphia, October 20-24, for its sixteenth annual convention, will also have an exhibit of safety machinery and appliances for mines.

FOREIGN

Report of Philippine Government Employees.—Dr. Victor G. Heiser, Director of Health, furnishes the following abstract of statistics of the health of government employees in the islands: Total number employed, 10,010; Americans, 2,810; Filipinos, 7,200. Deaths from illness: among Americans, 5; among Filipinos, 23: from violence, Americans, 2; Filipinos, 1. Average years of service: Americans, 6.93; Filipinos, 5.47. Average age at death: Americans, 38.93; Filipinos, 32.01. Annual death-rate per thousand: Americans, 1.77; Filipinos, 3.19. Annual death-rate per thousand for all nationalities, 2.79. All deaths, including those from violence, average rate per thousand, 3.09.

CANADA

Public Health Congress.—The third annual congress of the Canadian Public Health Association will be held in Regina, Sask., September 18-20, under the presidency of Dr. John W. S. McCullough, Toronto, provincial health officer of Ontario. The congress will hold general sessions and also there will be section meetings dealing with medical officers of health, medical inspection of schools, military hygiene, veterinary hygiene and food inspection, sanitary inspectors, engineers and architects, laboratory and social workers. The general sessions are to be held in the Regina City Hall and the sectional meetings in the Regina College.

Queen's Medical Faculty.—The medical faculty of Queen's University, Kingston, Ont., has submitted an amendment to its constitution whereby, when approved by the board of trustees, all financial control and responsibility will pass from the faculty to the board of governors of the university. In the constitution of 1892, academic union was provided for, but the financial administration remained in the hands of the faculty. Twenty-one years ago when the staff of the Royal College of Physicians and Surgeons of Kingston became a faculty of the university, there were ten professors, one lecturer, one demonstrator and two arts professors who taught medical students. At the present time the staff consists of fourteen professors, four associate professors in two faculties, five assistant professors, six lecturers and eight clinical assistants and demonstrators, thirty-seven in all. During this period of twenty-one years, 750 have been graduated from Queens in medicine. That this school of medicine has progressed is seen from the equipment of twenty-one years ago. Then there were a few stoves, a number of tabls and a part of a skeleton in the dissecting room. There was not a microscope in commission. To-day there are more than a hundred. In the past session, the fifty-ninth, the registration amounted to 251, an increase of two over last year. The finances are in good condition, there being a cash balance over all indebtedness of $4,452.99.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 2, 1913.

Sleeping-Sickness in Nyasaland

Surgeon General Sir David Bruce, head of the sleeping-sickness commission which was sent to Central Africa nearly two years ago to investigate the disease, has returned to England. The commission has made some important discoveries. It has found that the sleeping-sickness in Nyasaland is not the same as that of Uganda or the West Coast, although it belongs to the same category. It is more rapid and even more fatal. There has been no case of recovery. It is now established beyond doubt that the disease is carried by *Glossina morsitans*, a fly which is widely spread over the whole of Africa and is not merely confined to well-defined areas, like *Glossina palpalis*, which has hitherto been regarded as the carrier of the disease. Sir David Bruce's work has been carried on in a proclaimed district of Nyasaland on the eastern shore of the lake, extending 50 miles from north to south, and 25 miles from east to west. Animals were shot early in the morning, and specimens of the blood while perfectly fresh were carried back by motor-bicycle to the laboratory for examination. Half the wild animals shot in the area were found to be infected with sleeping-sickness in some form or other, and in all probability the whole of them may be said to be affected. The commissioners are of opinion that the game in these areas should be regarded in the same light as mad dogs and destroyed as a standing menace to natives and whites alike. Sir David Bruce's report has not yet been considered by the authorities, so it cannot yet be said what steps will be taken. The disease in Nyasaland and north and northeastern Rhodesia has been given the name of sleeping-sickness, but the work of the commission went to show that it was the old tsetse fly disease of the South African hunters, which was formerly supposed only to attack animals, but has now spread to man. Some regard the disease as a new one, but Sir David Bruce believes it to be the disease known over large areas as nagana and called by that name in the nineties. Human cases have been found not only in Nyasaland, but also in northeastern Rhodesia, Portuguese East Africa and South Zambesia, and in all probability other cases will be discovered wherever these flies are found, for it is proved that *Glossina morsitans* carries the disease known as nagana. Sir David Bruce does not believe that there is any danger of the disease spreading. He is of opinion that it has probably been in these areas from time immemorial and that it will never assume the terrible proportions of the sleeping-sickness of the Congo or Uganda. Camps were established for segregation purposes, but they were found to be of no avail, being unpopular with the natives. As patients were often found when the disease had run two months of its course, and as they invariably died during the third month, the native naturally regarded the camps with suspicion, and accordingly sufferers were treated in the village.

The Control of Venereal Disease: Demand of the Profession for a Government Inquiry

In this country there is no system of examination and control of prostitutes, such as exists in other European countries. Consequently the state does nothing to prevent the spread of venereal diseases. The difference may be explained on two grounds. This country is more individualistic than others; the state interferes less in personal affairs. In the second place a strong objection exists among religious persons to "the state recognition of vice." In a letter addressed to the press a demand has been made by the leading men in the profession, including the presidents of the Royal Colleges of Physicians and Surgeons, Sir William Osler, Sir Clifford Allbutt and the principal dermatologists and syphilologists for some action on the part of the government. It is pointed out that the increase of medical knowledge during the last sixty years has been extremely rapid and the control of health problems by the state and municipalities has become one of the most striking features of modern civilization. The state has compelled local authorities to build asylums for the insane; it has encouraged them to make provision for the segregation of cases of infectious fevers; it has insisted on the notification of many infectious diseases; it has undertaken the inspection of schoolchildren on a colossal scale; it has introduced an elaborate machinery to insure the purity of foods; it is steadily building up a vast system of public health legislation. To-day we are looking forward to what may be the effects of the campaign against tuberculosis. In all this organized effort there is one notable omission. There has always been a conspiracy of silence with regard to venereal disease. When the subject was discussed last year at the Royal Society of Medicine it was stated that in London alone 40,000 new cases of syphilis occur every year. The disease claims its victims not only from the vicious but also from the innocent. We are living to-day in a new era as regards diagnosis and treatment. The microbes responsible for venereal diseases have been discovered. The time is therefore ripe for an organized effort on a comprehensive scale to reduce the incidence of these diseases. The experience of the army medical department has shown during the past few years that an enormous reduction can be brought about by systematic effort. Organized effort among the civilian population is impracticable until the public conscience has been aroused, and can be attempted only after a full and authoritative investigation. These leaders of the profession therefore appeal to the public to demand the appointment of a "royal commission" (a government commission), its members to include a substantial majority of physicians, to investigate and recommend what steps, prophylactic and therapeutic, should be taken to cope with these diseases. In reply to a question in parliament the prime minister said that the subject would receive the careful consideration of the government. It will be discussed at a meeting of the International Medical Congress by the leading syphilographers of this and other coun-

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tries and is expected to excite so much interest that the section of dermatology, which meets at St. Thomas' Hospital, will be moved to meet for this purpose at the Albert Hall, the largest hall in London. Probably in anticipation of this the demand referred to before has been made.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 1, 1913.

The Campaign Against Tuberculosis

The Académie de médecine recently passed a resolution in favor of the obligatory reporting of tuberculosis, and it is beginning to be conceded that if such declaration is not to be a vain word, prophylactic measures are necessary. A bill has been presented before the senate for the foundation of public antituberculosis dispensaries for general antituberculosis education, the giving of advice with regard to prophylaxis and hygiene, for facilitating the admission of patients into suitable institutions and placing within the reach of the public disinfection service for clothing, dwellings and so on, rendered infectious by patients. Free consultations and distribution of medicine should also be provided for by the dispensaries. According to the senate bill the necessary funds will be looked for in part from private sources and in part from the government. When the number of deaths in the commune shall have exceeded the average mortality in France during three consecutive years, the foundation of an antituberculosis dispensary is to be obligatory. The commune, department and government are to bear the expense in equal proportion.

Aid for Large Families

A law has just been promulgated according to which every head of a French family, responsible for the expenses of more than three legitimate or recognized children, whose resources are insufficient to take care of them, is to receive an annual allowance for each child, after the third, who is less than 13 years of age. If the mother is responsible for the children on account of the death of the father or through his abandonment of the family, or for any other reason, the same assistance is to be rendered for each child after the first. If the mother is dead or has abandoned the family, the father is to receive assistance for each child after the second. Relatives who care for the children after the death or abandonment of father and mother are to be considered as heads of families.

Measures Against Flies

The Council of Public Hygiene and Health has had the prefect of police publish 500,000 copies of a circular to be distributed throughout France, giving advice in regard to the protection of food from flies, the excluding of flies from dwellings, the destruction of flies and the prevention of their reproduction. Posters, giving similar information, have been distributed and posted in Paris and in the provinces.

Necropsy Arranged by Will

Dr. Pinard, professor of clinical obstetrics in the University of Paris, and M. Barrier, inspector general of the veterinary schools, both of whom are members of the Société pour la propagation de l'incinération, have left instructions in their wills that their bodies shall be delivered to the Faculté de médecine for necropsy before being burned.

The Psychophysiologic Signs of Superior Skill among Typewriters

Recently M. J.-M. Lahy reported to the Académie des Sciences the results of his investigations of the psychophysiologic signs indicative of superior skill among typewriters. He classes his subjects according to the rapidity and exactness of their work, judged by the results of their copy of a text containing 1,702 characters. After this test, each subject was examined for memory of figures and phrases, attention, imagination, abstraction, judgment, reasoning, tactile and muscular sensibility, auditory reactions and dynamometric force. The conclusions are that abstraction, judgment and imagination seem to have no part in the superiority of typewriters. The constant characteristics in a general way among good typewriters are good memory for concrete phrases, a tendency to equal muscular strength of the two hands, well-developed tactile and muscular sensibility and sustained attention. Curiously, these experiments have shown in all the good subjects a relative slowness of auditory reactions, indicating that a relatively slow action, well coordinated, is preferable to one that is rapid but poorly coordinated.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 8, 1913.

Personal

Professor von Wassermann has been appointed director of the Kaiser Wilhelm Institute for Experimental Therapy.—— General staffsurgeon a.D. Dr. van Bestelmeyer died at Munich a few days ago.

Professor Rosenthal of Erlangen has resigned his position. Professor Weinland of Munich has been called as his successor.

Professor Hering of Prague has been called as director of the newly founded pathologic-physiologic institute, and Prof. R. Müller of Kiel, as director of the hygienic-bacteriologic institute erected at the Academy for Practical Medicine in Cologne.

Professor Dietrich, prosector at the public hospital in Charlottenburg, has been appointed director of the pathologic institute of the Akademie für praktische Medizin in Cologne.

Professor Schmieden, for many years assistant to Professor Bier, has been called to succeed von Bramann as director of the surgical clinic at Halle.

Minor Sanitary Measures Demanded by the Organized Profession

The business committee of the Berlin ärztliche Standesverein, the association representing the professional interests of Berlin physicians, at its last session adopted the following resolutions:

1. The management of the Berlin street car company is notified of the frequent violation of the street-car regulation prohibiting tearing off the street-car tickets from the block with the finger moistened with saliva, and is requested to secure the greatest possible abatement of this nuisance. The chief of police is also requested to secure the abatement of the similar nuisance in shops of moistening the finger with saliva in tearing off paper bags and wrapping paper.

2. The chief of police is also requested to take some action with reference to the nuisance so offensive to esthetic taste and to sanitary safety due to the pollution of the streets of Greater Berlin by dogs.

3. The business committee also petitions the authorities in charge of the municipal hospitals asking for an abatement of the evils connected with charges for treatment of ambulant patients in the hospitals.

The Work of the Berlin Medical School Inspectors

The number of Berlin public schoolchildren for the year 1911-1912 was about 225,000, the number of boys and girls being practically equal. About 34,000 children entering school for the first time were examined by the medical inspectors, an average of 680 for each school physician. Physical or mental unfitness for school was found in 9.72 per cent. as compared with 10.55 per cent. for the previous year. The causes were general debility (anemia) in 1,317; rickets in 377; scrofula in 140; bone tuberculosis in 77; pulmonary tuberculosis in 155; other lung diseases in 134; heart disease in 61; kidney disease in 5; nervous diseases in 133; epilepsy in 28; imperfect mental development (idiocy or feeblemindedness) in 75 and 440 respectively; disturbances of speech in 73; nose and throat affections in 7; eye diseases in 40; ear diseases in 26; skin diseases in 19; curvature of spine in 89; hernia in 8; deformities in 25; other diseases in 73. Thus, 47,619 children were placed under medical supervision, a percentage of 21.22 as compared with 21.4 in the previous year. For the schools for backward children and special classes for the feeble-minded, 1,133 children were examined. Of these, 925 children were assigned to the subsidiary schools, 103 were left in the common school, 14 were transferred to idiot asylums, 91 were placed under private instruction; 448 children were examined for the courses in stuttering and 174 children for the special classes for those hard of hearing.

THE DENTAL CLINICS

In the first Berlin school dental clinic the number of children treated was 11,950, in the second, 16,023. Here the attendance has increased about 3,000. In the newly opened third school dental clinic the subscription system was tried. The children subscribing are placed under dental treatment and supervision during the entire year. One mark per year is required for each child of well-to-do families; for all of the public school children of the same family, three marks. The city of Berlin has raised the appropriation for the school dental clinics from $3,750 (15,000 marks) to $6,250 (25,000 marks).

CONTAGIOUS DISEASES

On account of contagious diseases, 80 classes were closed during the year as compared with 40 in the previous year. In view of the occurrence of numerous very obstinate epidemics of diphtheria and scarlet fever, a circular has been prepared to be given to the children to take home when a case of contagious disease occurs among the scholars in the room in question.

Use of Meat

Professor Max Rubner, the well-known physiologist and hygienist of Berlin, has contributed a valuable article to the discussion of the meat question which has excited a good deal of agitated public discussion, not always according to the facts. He devotes a large amount of space to this question in his work just published entitled "Changes in the Food of the Masses" (Wandlungen in der Volksernährung). From the material which he brings forward he shows that there is no question of a lessening of the use of meat or of Germany falling behind other nations in this respect if we take into consideration a long period of time. At the present time the inhabitants of Australia are by far the largest meat eaters, consuming 111.6 kg. (250 pounds) per capita yearly. The consumption is only half as great in the United States (54.4 kg.). Then comes Germany (52.30), England (47.6), France (33.6), Belgium and Holland (34.3), Austria-Hungary (29), Spain (22.2), Russia (21.8) and Italy (10.4).

It is thoroughly false when the Englishman is pointed out as the beefsteak eater, for the German eats on the average somewhat more meat than the Englishman. Formerly his use of meat was markedly less and the following figures show how it has grown within a century. In 1816 Germany consumed per capita 13.6 kg.; in 1840, 21.6; in 1861, 23.2; in 1873, 29.5. Then occurred a temporary fall in 1883 to 29.3, followed by a rise in 1889 to 32.5; in 1900 to 43.3, and in 1907 to 46.2. At present the use of meat is 3.4 times as great as it was a century ago. In 1813 the consumption of meat in Germany was about the same as it is to-day in Italy, the country that uses the least meat of any in Europe. To be sure, there is at present about as great a difference between city and country, the cities consuming the most meat. The average consumption in the cities is 52.4 kg. per capita annually as compared with 31.6 kg. in the country. All the cities, although the consumption of meat varies very much among them, are above the average of the country districts. The least meat is used in Königsberg (40.7 kg.) while there is a large consumption in Berlin, Karlsruhe and Mannheim (70.9 kg.) and the largest in Munich, Augsburg and Nuremberg (80.2 kg.). A large consumption of meat was also characteristic of Munich in the past. The bulk of the meat is consumed by artisans, the so-called upper classes eating only one-seventh. Rubner divides the use of meat among the trades as follows: Farm and day laborers, 16.5 per cent.; artisans, 44.8; the lower middle class, 15; the middle class, 10.5, and the higher class, 12 per cent. The increase in meat consumption is to be attributed to the more frequent use by the lower classes.

Vital Statistics of Prussia 1911-1912

In the state of Prussia during 1911, there were reported 1,225,091 births, 732,728 deaths (including 35,874 still-births) and 321,151 marriages. The excess of births was 492,363 or 12.1 per thousand of the average population. In 1912, there were born according to the previous sources of information 1,219,867 children (including still-births) and there were 671,989 deaths. There were 328,415 marriages. According to this, the number of births was 5,224 less than the previous year and the number of deaths 60,819. The excess of births accordingly had increased by 55,595, an increase from 492,363 to 547,958. An especially striking feature of last year's statistics is the decreasing number of births with an increase in the number of marriages. While during the decade from 1902-1911 the number of births was on the average, 1,284,110, the number of deaths, 725,241, the excess of births, 558,869, the number of births in 1911 was already 59,019 below the average of the decade, and in 1912, 64,243. The number of deaths in 1911 was 7,487 above the average of the decade but in 1912 remained 53,332 below the average of the decade. The number of marriages in 1911 was 17,631 above the average of the decade from 1902 to 1911 and in 1912 it was 24,895. It is consequently evident that the fertility of married women has suffered a not inconsiderable reduction. While the birth-rate has sunk about 18 per cent., the death-rate until 1911 had diminished about 11 per cent. and was in the last year about 22 per cent. lower than in 1903. The marriage-rate for 1912 agrees with the average for the decade, 16

SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS

August 6-12, 1913

(From Our Regular and Special London Correspondents)

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The Garden Party at Windsor

The great event of the Congress in the way of entertainment was the Garden Party given by His Majesty the King at Windsor, on Saturday, August 9. The invitations were limited to 2,000. Four special trains from Paddington station carried the guests to the main entrance to the Castle where the Lord Chamberlain, the Comptroller of the Household and other officials received them on behalf of the King. The visitors then passed rapidly into the Great Quadrangle and proceeded to follow a steward through the whole of the State Apartments used by His Majesty when entertaining sovereigns on visits of state. Entering the vestibule the guests were conducted up the grand staircase into the state anteroom, decorated with exquisite carvings of fish, fruit and game, by Gibbons. Passing thence through the picture gallery containing masterpieces by Rembrandt, Holbein, Claude, Andrea del Sarto and many other masters, the Van Dyck Room (formerly the Queen's ball room) was reached, decorated entirely by works of Van Dyck. The Queen's audience chamber, decorated with fine Gobelin tapestries executed for Louis XIV from designs by Jean Francis de Troy, representing the history of Esther, was then traversed into the Queen's presence chamber. Thence through the grand room the visitors entered the magnificent St. George's Hall, decorated with the shields and banners of all the knights of the order from its foundation. The grand reception room, where guests are received for banquets in St. George's Hall, came next. It is decorated with Gobelin tapestries representing the story of Jason and Medea. On the left the throne room, hung in blue velvet, was entered. It contains a silver gilt throne ornamented with cut crystals, formerly the state chair of the King of Candy. Passing through the ante-throne room, the Waterloo chamber, the grand vestibule and down the grand staircase again, the visitors were ushered through the Italian Gardens, where the band of the Coldstream Guards was playing, on to the east lawn, a magnificent pleasance where tea was prepared in large marquees. The tables were decorated with roses and carnations from the royal gardens, and besides tea and coffee, champagne and other beverages were abundantly forthcoming and the most dainty delicacies and confections were served. The guests scattered about through the pleasance or gathered in groups greeting old friends and making new ones until 6 o'clock, when, after viewing the Albert Memorial Chapel and St. George's Chapel they returned to town in special trains, arriving soon after 7 o'clock after a unique day of beautiful weather.

The same evening (Saturday) Sir Lauder and Lady Hamilton entertained a large party of the more eminent foreign visitors to dinner at the British Empire Club.

Dr. Norman Moore, president of the historical section, also entertained about thirty of the section at a dinner. The dinner of the Section of Obstetrics and Gynecology also was held on Saturday evening, August 9.

Church Services Sunday

On Sunday morning, August 10, a large number of members of the Congress attended the special services at St. Paul's Cathedral (Anglican), where the sermon was preached by the Dean, the Rev. Dr. Inge, at Westminster Abbey (Anglican), where Bishop Ryle preached, or at Westminster Cathedral (Roman Catholic) where Cardinal Bourne preached. The theme in all cases had reference to the intimate connection between the functions of the priest and the physician. Dean Inge, however, struck a very modern note when he impressed on his hearers the importance of throwing the weight of their influence into matters of state. Bishop Ryle adverted favorably to the movement in favor of facing the subject of vene-

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real diseases. The service at the abbey was marred by unseemly interruptions from suffragettes.

Other Sunday Happenings

An excursion to Harrogate, one of our British spas, and an invitation by the Council and Medical Fellows of the Zoological Society to some 2,000 members to visit the garden, where numerous informal lunch and tea parties took place, provided for some of the visitors. About 500 were entertained by Mr. and Mrs. Waldorf Astor at their seat at Cliveden, one of the most beautiful spots on the Thames, where tea was served on the terrace to the music of the band of the Coldstream Guards. The Physiologic Section gave a river picnic on the Thames and Sir Watson and Lady Cheyne entertained about 200 of the Surgical Section at a river party starting from Taplow. Another delightful trip was that of the Electrotherapeutic Section of the Royal Society of Medicine, who took about 160 up the Thames from Westminster Bridge to Sunbury, providing luncheon and afternoon tea. The Anesthetic Section also had a luncheon at the Zoological Gardens. The Sections of Rhinology and Laryngology and of Otology took 300 ladies and gentlemen of the Congress to Oxford.

Honoring Lord Lister and Sir Patrick Manson

Monday's Events

A graceful tribute was paid on Monday, August 11, when the French members of the Congress accompanied Dr. Lucas-Championnière to the Royal College of Surgeons and placed a laurel wreath entwined with roses on a new bust of Lord Lister specially executed for the college by Sir Thomas Brock, R. A. Another foreign tribute to British scientific work was the presentation in the Section of Tropical Medicine and Hygiene on Monday to Sir Patrick Manson of a medallion in gold, bearing his profile, the work of M. Richer, of Paris.

Entertainments on Monday showed no sign of slackening. An excursion to Stratford-on-Avon, a visit to the Middlesex Hospital, garden parties at the London, Guy's and University College Hospitals and at the Hill, Hampstead Heath, found occupation for 2,500 members and their ladies. In the afternoon the nine medical Masonic lodges of London welcomed their foreign Masonic brethren at a special lodge held under the banner of the Aesculapius Lodge, No. 2410, at Freemason's Hall, when about 150 members of English medical lodges and officials of the Grand Lodge of England and 100 visitors from all parts of the world attended. The Pro-Grand Master of England, Lord Ampbhill, presided, and addressed the lodge, reading a letter from the Grand Master, the Duke of Connaught, regretting his inability to be present. The representatives of the various nationalities replied, Bro. C. M. Green, P. D. G. M., of the Grand Lodge of Massachusetts, speaking on behalf of the Masons of the United States.

In the evening the President of the Congress, Sir Thomas Barlow, gave a dinner at the Savoy Hotel at which 200 distinguished British and foreign members were present, as well as the Lord Chancellor, the Archbishop of Canterbury, the Archbishop (R. C.) of Westminster, the American Ambassador and Lord Strathcona. Later Lord and Lady Strathcona's garden party was attended by upward of 5,000 visitors in the beautiful grounds of the Royal Botanical Society, Regent's Park. The scene was enchanting.

Other entertainments on Monday evening were the dinner of the Royal Army Medical College to naval and military surgeons from abroad, and a conversazione and reception of members of the Dermatological Section in the Princes' Restaurant, Piccadilly.

On Tuesday, August 12, there were half-day excursions to Cambridge, Oxford, Canterbury and Farnham.

Sir Frederick and Lady Eve gave a garden party at Kew and the President of the Stomatological Section, Mr. Morton Swale, one at Henley. The members of the Section on Diseases of Children paid a visit to Queen Mary's Hospital for Children, Carshalton. In the evening the Sections of Rhinology and Laryngology and of Otology gave a combined dinner at the Hotel Cecil to which ladies were invited.

International Association of Orthopedic Surgery

An International Association of Orthopedic Surgery was decided on during the Congress and a committee has been found to attend to its organization. The committee consists of the following representatives, all of whom have attended the Congress: United States, Prof. R. W. Lovett of Boston; Great Britain, Mr. Robert Jones of Liverpool; Holland, Professor Murk Jansen of Leyden; Italy, Professor Putti of Bologna; France, Professor Kirmisson of Paris; Germany, Professor Vulpius of Heidelberg; Hungary, Professor Dollinger of Budapest; Canada, Professor Clarence Starr of Toronto; Russia, Professor Turner of St. Petersburg; Austria, Professor Spitzy of Vienna, secretary.

Esperanto Medical Association

The Universal Esperanto Medical Association (Tutmonda Esperanta Kuracista Asocio) held two meetings in the Geological Laboratory of the Royal School of Mines, under the presidency of Dr. Jameson Johnston of Dublin. At the first meeting on August 8 Dr. Johnston delivered an address on the "Need for a Common Language for Mutual Understanding in Congresses and the Use of Esperanto in Medicine." Addresses were also delivered in English, French, German, Russian, and other languages on Esperanto and the medical profession, and a number of recruits were made. The second meeting, on August 11, was taken up with the discussion in Esperanto of highly technical subjects.

Report of Permanent Commission and Award of Prizes

At the closing meeting, held in the Albert Hall on August 12, the Permanent Commission of the Congress presented its report. Besides resolutions urging governmental intervention in regard to syphilis by all the nations officially represented at the congress, protesting against any interference with animal experimentation, urging the disuse of overmilled rice and the abolition of quarantine in regard to beriberi, and changing the name of Malta fever to that of undulant fever, the report recommended the acceptance of Munich as the place of the next Congress, to be held in 1917, and nominated Prof. Dr. Friedrich von Mueller as president-elect. It also announced the award of the Congress prizes, as follows: The Moscow prize to Prof. Charles Richet of Paris, for his work on anaphylaxis. The Paris prize to Prof. A. von Wassermann of Berlin, for his work on experimental therapy and immunity. The Hungary prize to Sir Almroth Wright of London, for his work on anaphylaxis.

Hon. John Burn's Address

On the closing day at the Albert Hall Hon. John Burns, president of the Local Government Board, delivered an admirable address on the "Relationship between Medicine and Public Health."

Address on Heredity

On Monday, August 11, Professor Bateson, F.R.S., of Cambridge University, delivered an address on Heredity in Jehangir Hall of the University of London. After a tribute to the penetrating foresight of Francis Galton, Professor Bateson said that by accurate genetic analysis the means was afforded not merely of elucidating the inter-relation of parent and offspring, but also of contributing to a right interpretation of various special problems of pathology and anthropology, a true understanding of the course of human history, and the direction and control of the progress of mankind. The essence of the Mendelian principle was (1) that in a great degree the properties of organisms were due to the presence of distinct detachable elements separately transmitted in heredity; and (2) that the parent could not transmit to the offspring any element or its corresponding property which it did not itself possess. After reviewing the fundamental facts of the Mendelian doctrine, and showing that the presence or absence of a given property might be due to either a positive or a negative character, Professor Bateson pointed out that the American students of genetics had made it clear by evidence that feeblemindness had at least one mark of a recessive condition. But while the mental deficiency bill was a movement in the right direction, the violent measures now being adopted in

some of the United States (e. g. Pennsylvania and New Jersey) gave ground for some disquietude. It was one thing to check the reproduction of hopeless defectives; it was another to recognize a wholesale tampering with the structure of a population such as would follow if any marriage not regarded by officials as eugenic were liable to prohibition. Nothing yet ascertained by genetic science justified such a course, and we might wonder how genius and the arts would fare in a community constructed according to the ideas of such legislators. There was a danger that in ridding the community of mania we should leave it gravely affected with dulness. The genetic analysis of insanity was at present practically impossible because the diagnosis of its various forms was by no means clear, and the conditions of life had obviously much to do with the development of such weaknesses. The tendency of the work of genetics was more and more to exhibit the fixity and definiteness of the laws of descent. Evolutionary change was effected not so much by gradual transformations under ameliorating or detrimental conditions, but mainly by the occurrence of individual or sporadic variation. The direction in which genetic research points was not difficult to determine. Those who had some knowledge of genetic physiology were aware that the whole form of modern science and legislation had hitherto been exercised in the preservation of defective strains, and would not feel serious hesitation as to the true cause of the increase of lunacy pointed out by Sir James Crichton Browne as running in certain decades.

Discussion on Internal Secretions

(Continuation from last week of report of Medical Section)

Friday morning, August 8, was held a joint session of the Section of Medicine with the Section on Physiology to discuss "The Correlation of the Organs of Internal Secretion and Their Disturbances." Prof. Sir E. A. Schäfer was in the chair. The discussion was opened by Prof. E. Gley of Paris, who gave a résumé of the methods by which the existence of internal secretions could be determined. He pointed out a fact that is overlooked by too many of the workers in this field of physiology, that one cannot take it as proved that the substances found in the extracts made from organs were present in these organs during life. These extracts were often highly toxic, but it must not be assumed that the toxicity was due to specific substances secreted by the organ; the toxicity depended on many conditions, and most of all on the method by which the extract had been prepared. Among other topics, he dwelt on the phenomenon of tachyphylaxis, exhibited when an animal's tissues acquire the property of resisting a second toxic injection within a few minutes or hours, while the first injection had found these tissues unprepared and open to attack. The reciprocal actions of the various ductless glands were of course, he admitted, extremely complex and hard to disentangle; he looked for solution of these problems to laborious physiologic and clinical work in the future. Several succeeding speakers—Professor Biedl of Vienna, Professor von Korányi of Budapest, Prof. F. Kraus of Berlin—read papers dealing with generalities and matters of detail that lend themselves little to condensation in such an account of the proceedings as this. Professor Cushing of Harvard gave an admirably clear and well-illustrated account of much of his own experimental and clinical work on disorders of the pituitary body. He exhibited slides of dogs whose pituitary bodies had been removed, and followed them with slides of human beings presenting very analogous—*mutatis mutandis*—syndromes. The adiposity and infantilism characteristic of Frölich's syndrome might, to some extent at any rate, be inherited; a photograph was exhibited showing a grandmother and a mother who both presented several of the outward features of the syndrome, while the daughter, just the sort of child one would have expected of such an ancestry, exhibited the syndrome in all its completeness. Professor Cushing brought to the attention of his audience a new type of dyspituitarism; the patients of this type are thin instead of being fat, but exhibit the same loss of secondary sexual characteristics (though perhaps by retrogressive change) as the patients of the commoner adipose type. He referred to several other types of dyspituitarism, and showed how in some the disease had been diagnosed as myxedema, and had received the appropriate treatment without benefit. He had found that the exhibition of pituitary extract improved these patients, and he took such a therapeutic success to be evidence of the correctness of his diagnosis. Another patient, a girl of 6, looked as if she were 16 years old; she had menstruated from the age of 2, and the secondary sexual characteristics had made their appearance when she was 3. He pointed out in conclusion that further researches into the functions of the pituitary gland would very likely throw light on the physiology of sleep; they had already done something to illuminate the etiology of hibernation. Other points in the correlations of the ductless glands were brought out by other speakers, including Professor Herring of St. Andrews, Dr. Falta, Dr. Blair Bell of Liverpool, Prof. Swale Vincent, Prof. G. Murray of Manchester, Professor Morsaline of Buenos Aires, and others. Professor Gley, in replying to a number of the points raised, took occasion to emphasize that hyperplasia of a gland, of the suprarenals in granular kidney, for example, was not necessarily equivalent to its functional hyperactivity, an assumption often made. The hall in which the meeting took place was crowded to its utmost capacity, and the discussion reached and maintained an unusually high level of excellence.

The afternoon session (August 8) was devoted to the reading of three papers. The last of these, by Dr. Haven Emerson of New York, dealt with the occurrence of the status lymphaticus in adults. The general public comes to hear of this uncommon condition from time to time through the coroner's court; for the children or adolescents who suffer from status lymphaticus or lymphatism are those who are apt to die suddenly while under the influence of an anesthetic. Dr. Emerson brought forward a number of considerations to show that a milder degree of lymphatism is surprisingly frequent in the adolescents and adults treated for chronic alcoholism and mental disease. His facts and figures are drawn from 1,000 of the male patients admitted to the alcoholic wards of the Bellevue Hospital, New York: No less than 220 of these patients showed most if not all of the physical attributes characteristic of the status lymphaticus. The chief of these attributes are as follows: Scantiness or absence of the hair on the lip, chin, chest, axilla; a feminine type of distribution of the pubic hair; a tendency to narrowness and length in the thorax; a notable roundness and arching of the thighs and roundness of the upper arm; smallness of the penis and testes. Often the skin is peculiarly soft and velvety, and curiously free from hairs. Dr. Emerson failed to find the enlargement of the spleen that is so commonly said to occur in lymphatism. Examining the post-mortem records he found 288 cases of lymphatism in 3,600 autopsies, and 242 of these patients had succumbed to infectious diseases such as tuberculosis, pneumonia, meningitis, enteric fever. He draws the conclusion that persons with this mild type of lymphatism are bad subjects for surgical operations, are prone to die if they contract an infectious disease, and show a tendency to alcoholism and insanity. He does not go so far as to say that they are social undesirables, but thinks that they should be protected against infections and against themselves.

Discussion on Heart Troubles

A first-rate discussion on "The Pathology of Heart-Failure" during the morning session Saturday, August 9, was opened by Prof. H. Vaquez of Paris, who began with an account of the various methods of clinical investigation and the symptoms that tell one when heart-failure is to be expected or diagnosed. The chief of these were acceleration of the pulse-rate, fall in the arterial blood-pressure, changes in the cardiac rhythm (and particularly the appearance of certain forms of irregularity), and alterations in the form of tracings furnished by the electrocardiograph. Employers and interpreters of the electrocardiograph, however, should not permit zeal to outstrip discretion, and attempt to draw from the electrocardiogram deductions more precise than our present knowledge warrants. Examination with the x-ray, especially when repeated from day to day, gave more valuable information about heart-failure than any

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other method. Failure of the heart might be either partial or total, and might affect different chambers of the heart in different cases. Thus failure of the auricles was not rare in mitral disease, and often really seemed to make but little difference to the patient. Failure of one or other of the ventricles of the heart was commoner; failure of the left ventricle was the cause of those painful palpitations and attacks of painful dyspnea that frequently occurred toward the end in severe cases of heart-disease, and often brought with them sudden death. Primary failure of the right ventricle, contrariwise, was characterized by quite other features — painless shortness of breath on exertion, with only a slight increase in the rate of the pulse. Total cardiac failure involving all four chambers together was rare; it might occur in healthy persons after prolonged and violent muscular exertion — in Marathon runners, for example. But it might also occur, oddly enough, in the pot-house patrons of such athletes, or in those who drank vast quantities of beer (the Munich or Tübingen beer-heart, so-called). Professor Vaquez and Professor Wenckebach, who followed him, believed that our prognosis in cardiac disease was so often unsatisfactory, or even totally wrong, because the trouble was due to debility of the heart-muscle, and because of our inability to form any correct clinical estimate of the degree of this debility. Arhythmia had been pointed to as an index of the impairment of cardiac muscle, but this was a mistake; arhythmia indicated impaired cardiac mechanism, and told us nothing about the functional competence of the muscular substance of the heart. In fact our only way of estimating the reserve power of the myocardium was the very unsatisfactory one of watching the progress of the malady. Professor Wenckebach expounded a method of measuring the reserve of cardiac power by estimations of the contractility of the heart-muscle; the method, however, though of great theoretical interest, did not admit of any practical application at the bedside.

Prof. W. T. Ritchie of Edinburgh next drew attention to "auricular flutter," a condition akin to auricular fibrillation. When fluttering, the cardiac auricles beat from 200 to 350 or even 380 times a minute; the ventricles often follow at only half that rate. He quoted cases to prove that neither auricular flutter nor auricular fibrillation deserve the gloomy connotation so commonly ascribed to them. They might last for years without harming the patient, and their establishment might even be associated with improvement in his general condition. Dr. L. F. Bishop of New York struck out a new line by attributing heart-failure to protein poisoning, and proposing to treat it by dieting and exhibiting repeated full doses of castor oil; Dr. Haig of London attributed heart-failure, *secundum artem*, to uric acid and nothing else. Of the other speakers several drew attention to the care that should be exercised in giving a bad prognosis in cases of morbus cordis. To diagnose "weak heart" as was so often done, was almost always wrong, as Professor Thayer of Baltimore, pointed out. Dr. Walsh of New York emphasized the importance of encouraging cardiac patients to think as well of their physical condition as possible.

Dr. E. Libman of New York read an account of a new form of subacute bacterial endocarditis which occurs mostly in persons who already have chronic valvular disease, a fact that suggests a relapse perhaps, rather than an infection with a new variety of microbe. The cases last from four to eighteen months, and in the great majority of cases end fatally; a few spontaneous recoveries and a few recoveries attributed to various forms of treatment have, however, been recorded. The microbe causing the endocarditis he had isolated in seventy-three out of seventy-five cases; it was almost always a streptococcus of a peculiar type, intermediate between the pneumococcus and the ordinary streptococci, and he proposed to name it the *Streptococcus mitis*. A special form of glomerular nephritis was characteristic of this new variety of endocarditis, and this was illustrated by lantern slides and explained by Dr. Baehr of New York, who was associated with Dr. Libman in his work. A special interest attaches to this form of heart disease because, as Dr. Poynton of London pointed out, it seemed to be very closely connected (if not indeed identical) with a form of rheumatic endocarditis described by himself and Paine in 1900. So far as Dr. Libman's investigations went, however, it appeared that *S. mitis* was not the same as the strains of the rheumatic diplococcus he (Dr. Libman) had been able to lay his hands on for purposes of comparison.

At the afternoon session a new and fairly simple method of obtaining simultaneously tracings of the arterial pulse, the venous pulse, and the heart-sounds was explained by Dr. R. Ohm of Berlin. Dr. Ohm's tracings showed clearly that his apparatus would be of considerable assistance in the diagnosis of certain forms of valvular heart-disease, and also for didactic purposes.

Diplococcus Endocarditis

Drs. A. Paine and F. J. Poynton of London next presented a summary of their recent work on rheumatic endocarditis. It was pointed out that the rheumatic diplococcus was capable of producing in man every form of endocarditis from the most benign simple variety to the most malignant. In animals, similarly, every variety of endocarditis could be produced by the intravenous injection of cultures of the diplococci taken from cases of rheumatic fever in human beings. Many forms of non-suppurative arthritis could be produced in animals, and a number of pictures were thrown on the screen showing the extensive circumarticular fibrosis and inflammation commonly produced; while others illustrated the fact that a typical rheumatoid arthritis, with lipping of the bones and erosion of the cartilages all complete, may result from such experimental infections of the joints in rabbits. A striking set of pictures illustrated the acute appendicitis that may follow, again in the rabbit, on the intravenous injection of rheumatic diplococci. Twenty rabbits six weeks old were inoculated with the organisms obtained from a case of rheumatic fever; nineteen developed polyarthritis, four appendicitis, one endocarditis. Microscopical sections of the inflamed appendices made it obvious that the rheumatic appendicitis of the young rabbit is in every way a replica of acute non-suppurative appendicitis in man. Necrosis of the lymph-nodules towards the periphery of the rabbits' appendix was conspicuous, followed by necrosis and disintegration of the greater part of the Lieberkühn's follicles and crypts opening into the lumen of the tube. Dr. Paine laid stress on the rapid phagocytosis of the organisms that takes place in both rheumatic rabbit and rheumatic man. He held that it accounts for much of the difficulty experienced by so many observers in isolating the rheumatic diplococcus from rheumatic patients.

Observations on the Venous Pulse

Dr. A. D. Hirschfelder of Baltimore next read his paper on various simple modes of diagnosing circulatory troubles that are commonly believed to require the use of expensive and complicated pieces of apparatus for their demonstration. Among the points he dealt with was the naked-eye observation of the venous pulse at the root of the neck. By laying the patient horizontal the internal jugular vein can generally be made to stand out in relief on the surface of the neck. Its edge and its pulsations can be thrown into relief by holding the margin of a white visiting-card parallel to its course and in close proximity to its border. This white card gives a fixed point that appears to amplify and at the same time define any pulsations that the vein may show. He illustrated the use that might be made of these pulsations in the diagnosis of various forms of irregular cardiac rhythm. For example, auricular extrasystoles can be seen to occur in pairs; ventricular extrasystoles singly, and he noted that these produce extremely large and forcible venous pulsations; in complete heart-block the number of extra auricular systoles intercalated between the ventricular beats varied in successive diastoles and was inconstant.

Discussion on Diabetes

The Monday, August 11, morning session was occupied by a very satisfactory discussion on diabetes mellitus. The subject was introduced by Dr. G. Dock of St. Louis, who went fully into the different views that have been published in the hope of clearing up its etiology. The connection of diabetes with the pancreas is well known; perhaps too much

attention is paid to the pancreas in diabetes, and too little to the other organs of the body. The control exercised by the central nervous system on the sugar-producing functions of the liver is better recognized nowadays than it used to be; the fact that many spots in the brain, besides the diabetic center of Claude Bernard, give rise to diabetes on puncture, was not sufficiently recognized. Reference was made to Cushing's admirable work on the pituitary gland; its posterior lobe plays an important if indefinite rôle in the metabolism of the carbohydrates, and its glycolytic function appears to be under the control of the superior cervical ganglion of the sympathetic. Acidosis, the terminal event that brings on diabetic coma in so many cases of diabetes, was connected with decrease in the amount of carbohydrate in the diet, increased fat-metabolism, and increase in the formation of sugar from the proteins of the bodily tissues. In the treatment of the disease, now mainly a matter of dieting, it was important to secure the attention and intelligent help of the patient. Prof. C. von Noorden of Vienna followed, and gave a first-rate account of the most recent views of the way in which the carbohydrate metabolism of the body is regulated. Needless to say, this regulation is highly complicated. Professor von Noorden presented to his audience a diagrammatic scheme in which the control of the glycogenic function of the liver was set out. The pancreas is the organ that tends to keep the consumption of sugar down, the chromaffin system (or, to mention its chief constituent, the suprarenal gland) tries to increase the consumption. But the pancreas is in turn controlled by the thyroid gland, the parathyroids, and the hypophysis; while the chromaffin system is under the control of the central nervous system. All of these controls, except that of the central nervous system, are exercised by the medium of the secretion of the various glands concerned, conveyed about the body by the blood-stream. The regulation of the glycogenic function of the liver by the pancreas and chromaffin system in the normal subject is such that the blood contains from six to eight parts of glucose per ten thousand. In diabetes this quantity is increased, either because the inhibiting power of the pancreas is weakened, speaking generally, or because the augmenting power of the chromaffin system is increased. In Claude Bernard's diabetic puncture of the brain, for example, the glycosuria is due to the central stimulation of the chromaffin system. Acidosis is fatal by removing the ammonia and alkaline bases from the body in excessive amounts; diabetic coma is the expression of alkaline poverty of the tissues. Coming to the treatment of diabetes, Professor von Noorden said that drugs are but little given to diabetics as such nowadays; the treatment consists almost entirely in setting each patient to live on exactly the diet that suits him best. A sugar-free diet is first given to reduce the glycosuria to the lowest possible value; in favorable cases the sugar disappears from the urine. The next step is to ascertain by direct experiment what is the limit of the patient's tolerance for carbohydrate; sugary or starchy foods are added cautiously to the dietary, and their effect in producing glycosuria is carefully watched. These tolerance tests require the constant supervision and regulation of the physician. It is most important that the body's sugar manufactories should at no time be overburdened; the urine must be kept as free from sugar as possible, or the disease will progress. Too much must not be expected from such treatment; there always will be cases of diabetes mellitus that progress in spite of the greatest care, because the lesions on which the disease depends are sometimes inevitably progressive. In severe cases he advised the adoption of alternating periods of carbohydrate feeding and carbohydrate starvation. Most cases should have plenty of fat in their diet; in severe cases two or three ounces of whisky should be given every day. Professor von Noorden described his well-known "oatmeal cure," which was found to do good, but for what reason was not understood. Banana cures and flour cures, worked on similar lines, had also been employed successfully. Dr. Cammidge of London introduced a new urinary test — the iodin coefficient of the urine — whereby it was possible sometimes to foresee some weeks beforehand the appearance of sugar in the urine of a patient with pancreatic disease. Lieut. Col. K. Prasad, I.M.S., gave an account of diabetes in India; it is not a rare disease among the Hindus, and their medical men treat it mainly by drugs that soothe the nervous system. Dieting did not occupy a large place in the treatment, and only a very mild degree of limitation was put on the consumption of carbohydrates. An uniformly bad prognosis was given. Dr. Labbé of Paris was on well-trodden ground when he read a paper proposing to divide diabetics into two classes clinically, the fat diabetics and the thin. Professor Saundby of Birmingham spoke of a number of practical points that should be kept in mind by practitioners who have to treat diabetes. He urged that too much meat should not be given, for too much meat was almost as bad as too much carbohydrate. It was important to remember that many of the diabetic foods advertised as free from starch were not by any means free from it; fraudulent manufacturers of such foods were only too common. He could not agree with Professor von Noorden's advice to give large quantities of alcohol to these patients.

Upholding Vivisection

At the beginning of the morning session, Tuesday, August 12, the president, Sir William Osler, put to the crowded audience a motion affirming the importance and necessity of vivisection, carried out, as it is, under due control, for the progress of medical science. The motion was carried unanimously.

Discussion on Arthritis

Prof. L. F. Barker of Baltimore opened the day's discussion on "The Differentiation of the Diseases Included Under the Title Chronic Arthritis." Professor Barker gave his hearers an exhaustive survey of the history of the nomenclature that has burdened and confused these chronic joint-troubles. In the earliest days any acute disease of the joints was called arthritis, any chronic disease was called gout. G. D. Baillou about 300 years ago reversed this, describing chronic conditions as arthritis, acute inflammations of the joints as rheumatism. Rheumatoid arthritis was a name invented in 1859 by Garrod. Many classifications of chronic arthritis had been attempted on pathological or etiological or morphological bases, or, worse still, by the employment of mixed criteria. He distinguished five main types: (1) the gouty; (2) the nervous; (3) arthritis deformans; (4) chronic infective arthritis; (5) primary progressive chronic arthritis apparently not due to any infection. He dwelt on the fact that in proportion as our knowledge increases, so are we able to transfer cases from group (5) with its unknown etiology, to group (4) in which the bacteria causing the arthritis are known. Complete knowledge, he believed, would some day enable us to empty group (5) into group (4) altogether: at present, however, this could not be done. It was a remarkable thing that cases falling into group (5) had been reported from all countries. He was followed by Prof. F. von Müller of Munich, who gave a very full and most instructive account of the pathology of chronic arthritis. A special feature of his address was the skill with which he figured on the black-board the many morbid changes that might be met with in such conditions. A number of the observed changes were of a degenerative rather than inflammatory nature, particularly in those forms of chronic arthritis in which hypertrophy is a marked feature. He drew attention to the curious arthritic and periostitic changes not rarely met with in patients suffering from non-inflammatory mediastinal new growths. Dr. Preston King of Bath deplored the unhappy terminology employed in descriptions of chronic arthritis, and agreed with Professor Barker in believing that his fourth and fifth groups would one day be merged. Professor Singer of Vienna spoke of the care needed in discriminating those cases of chronic arthritis due to tuberculosis or syphilis from the other varieties. Dr. J. B. Burt of Buxton emphasized the important actions of exercise and work in determining the exact nature of the changes produced in chronically inflamed joints. Similar changes (he called the phalanx of a London cab horse to witness) might be produced by overwork alone: he asked how many of the hypertrophic changes in the bones of chronic arthritis might well be due to the work done, the use made of the joint, and not to the inflammation at all?

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Dr. Hale White of London expressed his belief in the unity and existence of a chronic arthritis that has been recognized in this country for more than half a century under the name of rheumatoid arthritis. It was correctly placed by Professor Barker in his fifth group of cases; Dr. Hale White believed that it was due to a specific microbe that had never been isolated hitherto, and pointed out that the primary change, seen in early cases of rheumatoid arthritis, was confined to the synovial membrane. Dr. Poynton of London pointed out that whereas in days gone by chronic arthritis was attributed to errors of metabolism, at the present time the tendency was to attribute it to infection in every case. He believed that the truth lay somewhere between these two views. Injected intravenously into the rabbit, the rheumatic diplococcus isolated by Paine and himself was capable of producing any and every variety of chronic arthritis; further, the effusions withdrawn from such joints would often prove sterile, although one could have no reasonable doubt that they were in reality infected with the rheumatic streptococcus. Dr. A. E. Garrod of London deprecated the want of an international nomenclature, by the use of which the confusion at present reigning in the description and classification of cases of chronic arthritis by the writers of different nationalities now prevalent might be got rid of. Modern treatment was undoubtedly better than the old, as was proved by the smallness of the number of severe types of chronic arthritis to be seen nowadays.

(To be continued)

Marriages

HENRY CARL RICHTER, M.D., U.S.P.H.S., Calexico, Cal., to Miss Carrie Harrison Hamill of Globe, Ariz., at San Diego, August 4.

ROBERT BLUCHER MCCAY, M.D., to Miss Nellie Glenn Farnham, both of Sunbury, Pa., at Philadelphia, August 18.

CHARLES W. HUFF, M.D., Jackson, Wyo., to Miss Edna R. Cearfoss of Baltimore, at Cheyenne, Wyo., June 16.

JOSEPH JAMES ROWAN, M.D., to Miss Alice Butterfield, both of Dubuque, Ia., at Cedar Rapids, Ia., August 11.

OTTO JOHN HERMANN, M.D., Boston, to Miss Alice Hamilton O'Connell of Jamaica Plain, Boston, August 18.

LUTHER MILTON POWERS, M.D., to Mrs. Mary R. Byrne, both of Los Angeles, at Piedmont, Cal., August 6.

ARMINUS BLAIR LYON, M.D., Ulster, Pa., to Miss Cecile M. Shumway of Sayre, Pa., August 14.

HUGH AUGUSTINE RILEY, M.D., to Miss Clotilde L. Dunne, both of New York City, July 28.

RALPH STEPHEN FISHER, M.D., to Miss Hazel Therkelsen, both of Portland, Ore., August 9.

Deaths

John J. Mulheron, M.D. University of Michigan, Ann Arbor, 1869; and once president of the Wayne County Medical Society; a member of the Michigan State Medical Society; at one time owner and publisher of the *Chicago Medical Review;* in 1886 a member and president of the Detroit Common Council and president of the Wayne County Supervisors and a member and president of the Board of Estimates in 1888; died at his home in Detroit, August 2, aged 67.

William R. Mattox, M.D. Rush Medical College, 1888; formerly a member of the American Medical Association; once coroner of Vigo County, Wis.; for five years president of the Vigo County Medical Society and for the time president of the Union Hospital Board, Terre Haute; died at his home in that city, August 2, from nephritis, aged 58. A large delegation represented the Vigo Medical Association at the funeral.

William Basilio Mackie, M.D. Harvard Medical School, Boston, 1862; for half a century a practitioner of Boston and formerly on the staff U. S. Marine Hospital, Chelsea, the Boston City Dispensary and the Boston City Hospital; a member of the Massachusetts Medical Society; vice-consul of Venezuela at Boston; died at the home of his son in Brookline, August 8, aged 79.

Albert Steuben Hotaling, M.D. College of Physicians and Surgeons, Baltimore, 1894; a fellow of the American Medical Association; professor of obstetrics in the Syracuse University College of Medicine; one of the most prominent practitioners of Syracuse; died at the Hospital for Women and Children in that city, August 8, a day after an operation for appendicitis, aged 40.

Clinton Clarence Miller, M.D. New York University, New York City, 1877; for five years acting assistant surgeon in the Army with station at Fort Sisseton, N. D.; a resident of St. Paul since 1856; for many years a member of the staff of the City Hospital and physician to the City Workhouse; died at his home, August 12, from paralysis, aged 59.

S. Sollers Maynard, M.D. Jefferson Medical College, 1860; a fellow of the American Medical Association; for more than fifty years a practitioner of Maryland; once president of the Farmers and Mechanics' Bank; physician to the Montevue Hospital and city health officer; died in his office in Frederick, August 3, from angina pectoris, aged 78.

George Raynolds Stearns, M.D. New York Homeopathic Medical College, New York City, 1878; a member of the staff of the Buffalo Homeopathic Hospital and formerly medical director of the Ingleside Home; was struck by a street car while crossing a street in Buffalo August 8, and died a few hours later, aged 55.

Eugene Carson Hay, M.D. University of Virginia, Charlottesville, 1890; a fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States; a pioneer resident of Hot Springs; died at his country home near that city, August 6, after a long illness, aged 48.

Calvin Ingram Fletcher, M.D. Medical College of Indiana, Indianapolis, 1880; a fellow of the American Medical Association, and a well-known physician of Indianapolis, while exploring a crevasse in Blackfoot glacier, Glacier Park, Mont., August 19, fell over a 600-foot precipice, and was instantly killed.

C. C. Garrett, M.D. Atlanta (Ga.) Medical College, 1872; for twenty-four years a member of the Douglas County (Ga.) Board of Education and for sixteen years of that time, chairman; mayor or councilman of Lithia Springs since the incorporation of the town; died at his home, August 5, aged 63.

Philip Scholz, M.D. St. Louis College of Physicians and Surgeons, 1889; a fellow of the American Medical Association; a pioneer druggist and physician of St. Louis; who was struck by an automobile while alighting from a car, July 27; died at St. Mary's Infirmary, St. Louis, July 31, aged 72.

Thomas William Bailey, M.D. University of Pennsylvania, Philadelphia, 1902; a member of the Medical Society of the State of Pennsylvania; of Philadelphia; for many years consulting surgeon to St. Agnes Hospital; died in that institution, August 1, from typhoid fever, aged 34.

Oliver Livingston Jones, M.D. Bellevue Hospital Medical College, 1871; a retired practitioner of New York City; died in the Polyclinic Hospital, New York City, August 9, from the effects of bullet wounds of the head, self-inflicted it is believed with suicidal intent, aged 63.

Ovid Allen Hyde, M.D. Eclectic Medical College of the City of New York, 1884; for twenty-one years a member of the faculty of his alma mater and consulting surgeon on the dispensary staff of the college; died at his home in Queens, Long Island, August 5, aged 61.

Lemuel Austin Ferry, M.D. University of Georgetown, Washington, D. C., 1879; formerly a member of the American Medical Association; a member of the Illinois State Medical Society; died at his home in Geneseo, June 14, from heart disease, aged 69.

John Bohl, M.D. Cincinnati College of Medicine and Surgery, 1859; a member of the Ohio State Medical Association and one of the organizers of the Washington County Medical Society; died at his home in Watertown, August 13, from senile debility, aged 84.

Stephen Charles De Veny, M.D. University of Pennsylvania, Philadelphia, 1871; a member of the Illinois State Medical Society and a resident of Chicago for more than forty years; died at his home in that city, August 16, from nephritis, aged 68.

Adin Wilson Mitchell, M.D. Cincinnati College of Medicine and Surgery, 1880; a member of the Ohio State Medical Association; physician to the Brown County Children's Home; died at his home in Georgetown, O., May 24, aged 65.

James Thacker Boutelle, M.D. Harvard Medical School, 1871; a member of the Medical Society of Virginia; health officer of Elizabeth City County; died at his home in Hampton, August 7, from a nervous breakdown, aged 68.

Francis Xavier Dooley, M.D. Georgetown University, Washington, D. C., 1865; a member of the Medical Society of the District of Columbia, and also a druggist; died at his home in Washington, August 10, aged 72.

Robert T. Shaw, M.D. Jefferson Medical College, 1877; of Denver; formerly a member of the Colorado Legislature and a graduate in theology; died in St. Luke's Hospital, Denver, August 5, from uremia, aged 59.

William Frederick Beyer, M.D. University of Michigan, Ann Arbor, 1912; of Detroit; died in Harper Hospital, July 22, from septicemia, contracted while an intern in the University Hospital, Ann Arbor, aged 24.

Henry Skelton Carter, M.D. College of Physicians and Surgeons, New York City, 1872; a practitioner of New York City; died suddenly at his home in Tarrytown, N. Y., July 2, from angina pectoris, aged 64.

Edward Munroe Lane, M.D. Bellevue Hospital Medical College, 1892; of Pawtucket, R. I.; died in the Rhode Island Hospital, Providence, July 31, after an operation for disease of the intestine, aged 46.

Alexander A. Staats, M.D. Cincinnati College of Medicine and Surgery, 1868; a member of the Ohio State Medical Association; died at his home in Summerfield, May 16, from heart disease, aged 70.

Tence Francis Massey, M.D. Eclectic Medical Institute, Cincinnati, 1866; also a druggist; of Medaryville, Ind.; died in St. Elizabeth's Hospital, Lafayette, Ind., July 11, from septicemia, aged 73.

Bernard Francis Dennis, M.D. University of Buffalo, N. Y., 1899; of Buffalo; a fellow of the American Medical Association; died in a hospital in Oil City, Pa., about August 1, aged 36.

Elie-Jean B. Hazzard, M.D. Eclectic Medical College of the City of New York, 1886; also an attorney; died at his home in Lawrence, Kan., from atrophic cirrhosis of the liver, aged 72.

Henry M. Swigert, M.D. Cincinnati College of Medicine and Surgery, 1880; a veteran of the Civil War; died at his home in Hastings, Neb., August 5, from cerebral hemorrhage, aged 66.

Charles A. Sweet, M.D. College of Physicians and Surgeons of Chicago, 1887; a member of the Michigan State Medical Society; died at his home in East Jordan, May 4, aged 53.

James Pendleton Carter, M.D. University of Maryland, Baltimore, 1852; for 35 years a practitioner of Berkeley County, W. Va.; died at his home in Gerrardstown, August 4, aged 83.

James E. Overstreet, M.D. Southern Medical College, Macon, Ga., 1893; formerly mayor of Baxley, Ga., and president of the Citizens' Banking Association; died at his home, August 3.

Clarence Benjamin Wilson, M.D. University of Michigan, Ann Arbor, 1890; a member of the Vermont State Medical Society; died at his home in Bradford, May 31, aged 47.

Harry Daniel Abbott, M.D. Tufts College Medical School, Boston, 1904; a fellow of the American Medical Association; died at his home in Danvers, Mass., July 16, aged 33.

Andrew J. Shrader (license, Ohio); also an attorney; for many years a practitioner of Columbus; died in Milton Center, O., June 19, from senile debility, aged 93.

George Elbridge Swan, M.D. New York Homeopathic Medical College, 1866; in 1881, mayor of Beaver Dam, Wis.; died at his home in that place August 10, aged 75.

George W. Cornish, M.D. Detroit College of Medicine, 1894; a member of the Michigan State Medical Society; died at his home in Lawton, August 8, aged 53.

Hiram S. Broiles, M.D. University of Nashville, Tenn., 1873; for two terms mayor of Fort Worth, Tex.; died at Fort Leavenworth, Kan., August 7, aged 68.

Charles Owen Patton, M.D. Bellevue Hospital Medical College, 1886; died at his home in McFall, Mo., August 1, aged 58.

R. L. Rylee, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1891; died at his home in Bogart, July 25.

Samantha Smith (license, Mo., 1883); of Kansas City, Kan.; died in State Hospital No. 2, St. Joseph, Mo., July 27.

Silas H. Cardwell (license, Arkansas, 1903) died at his home in Hot Springs, August 1, aged 74.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

LEMMON'S RHEUMATISM CURE

Secretary of a Coal Company Offers to Instruct Physicians—Price One Dollar

On August 4 and 5 the Propaganda for Reform department received an extraordinarily heavy mail. In addition to the usual batch of inquiries regarding quacks and nostrums about seventy letters were received from Iowa physicians. Most of these letters enclosed a typewritten letter on the stationery of the Chicago, Wilmington and Vermillion Coal Company, signed by the secretary of that company, C. F. Lemmon. Mr. Lemmon's letter to the physicians of Iowa ran thus:

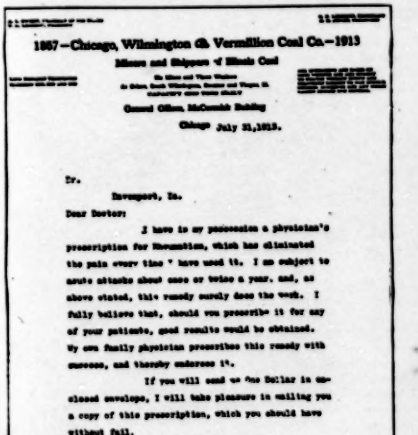
"*Dear Doctor:* I have in my possession a physician's prescription for Rheumatism, which has eliminated the pain every time I have used it. I am subject to acute attacks about once or twice a year, and, as above stated, this remedy surely does the work. I fully believe that, should you prescribe it for any of your patients, good results would be obtained. My own family physician prescribes this remedy with success, and thereby endorses it.

"If you will send me One Dollar in enclosed envelope, I will take pleasure in mailing you a copy of this prescription, which you should have without fail."

The physicians of the Hawkeye state are evidently poor game for the hunter of "suckers." Some of their comments on Mr. Lemmon's letter are worth quoting:

"I didn't bite. What is the graft?"

"What kind of a graft is this fellow trying to work?"



1857—Chicago, Wilmington & Vermilion Coal Co.—1913

Miners and Shippers of Illinois Coal

General Offices, McCormick Building

Chicago July 31, 1913.

Dr.

Davenport, Ia.

Dear Doctor:

I have in my possession a physician's prescription for Rheumatism, which has eliminated the pain every time I have used it. I am subject to acute attacks about once or twice a year, and, as above stated, this remedy surely does the work. I fully believe that, should you prescribe it for any of your patients, good results would be obtained. My own family physician prescribes this remedy with success, and thereby endorses it.

If you will send me One Dollar in enclosed envelope, I will take pleasure in mailing you a copy of this prescription, which you should have without fail.

Very truly yours,

C. F. Lemmon

Photographic facsimile of the letter sent by Mr. Lemmon to the physicians of Iowa offering to sell a prescription for rheumatism. The name of the recipient of this letter was deleted before photographing it.

"I notice his name is Lemmon. I wonder if he is trying to hand me one."

"The secretary of this firm certainly must think physicians are an easy mark."

"It surely is a unique sideline for a coal company."

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And so on. As it seemed probable that Mr. Lemmon would extend his Get-Rich-Quick Wallingford operations, it seemed worth while to head off his "game." THE JOURNAL accordingly asked some of the Iowa physicians who had been favored with Mr. Lemmon's invitation to send the secretary of the Chicago, Wilmington and Vermillion Coal Company the dollar necessary to obtain the prescription. This was done, but alas, the medical profession is to be kept in the dark regarding this marvelous remedy, for the money orders sent to Lemmon were returned to the senders with a short note to this effect:

"Yours enclosing $1.00 for rheumatism prescription received. Am obliged to return same to you for the reason that it now appears to me that I cannot fairly do as proposed."

This note, it should be said, while a typewritten one and signed by Mr. Lemmon, was not on the stationery of the coal company. It was on a plain sheet of paper.

What brought about Mr. Lemmon's change of heart in this matter we do not know. It is barely possible that the president of the Chicago, Wilmington and Vermillion Coal Company, who is Mr. C. F. Lemmon's father, may have found that his company was receiving an amount of notoriety that was not healthy for a legitimate business.

Correspondence

Cerebrospinal Fluid in Brain Tumors

To the Editor:—In THE JOURNAL of July 26, 1913, p. 265, Dr. M. J. Karpas states that "in tumor of the brain of non-luetic genesis the fluid is free from pathologic findings." I may say without going into the literature for quotations that a number of cases of non-luetic brain tumors have been reported in which the spinal fluid showed a positive result from Noguchi's modification of the Wassermann test and increased cell-count. I have had two such cases myself. In one of these cases in which I had originally made a diagnosis of brain tumor I revised the same to cerebrosyphilis on the basis of the laboratory report. The necropsy showed non-specific tumor at the pontocerebellar angle. Therefore, that the spinal fluid may in cases of non-specific brain tumor show increased cell-count and positive Noguchi test appears to me as a matter of very considerable clinical importance.

THEODORE DILLER, M.D., Pittsburgh, Pa.

[The foregoing letter was referred to Dr. Karpas, who replies:]

As a general rule, the cerebrospinal fluid in brain tumors of a non-syphilitic etiology is usually free from abnormal constituents. However, in cases in which the fluid shows an increase of albumin or lymphocytosis, one must think of two possible conditions: (1) a syphilitic factor in addition to the neoplasm, and (2) the production of some irritation which may result from the tumor growth coming into close contact with the meninges, causing the pathologic phenomena of the cerebrospinal fluid. Tumors in the cerebellopontine angle may cause sufficient irritation of the meninges to account for the increase of cells and globulin content. In my experience with brain tumors, I have found no pathologic conditions of the cerebrospinal fluid. Dr. Diller's suggestions are worthy of attention—indeed, our knowledge of the cerebrospinal fluid in tumors is not at all exhausted. The more records of careful fluid examinations of cases of brain tumors with necropsies and operations, the more light will be shed on this vital question.

MORRIS J. KARPAS, M.D., New York.

Data Requested on Great Artists and Famous Anatomists

To the Editor:—For several years I have been trying to secure material for a monograph on great artists and famous anatomists. Will you kindly print this letter, in the hope that some of your readers may give me data concerning this interesting subject?

JAMES MOORES BALL, M.D., 4500 Olive St., St. Louis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE NEW CANADIAN MEDICAL PRACTICE ACT

To the Editor:—What are the qualifications for practicing in Alberta or Saskatchewan? Is the new Canadian medical practice act now in operation and does it apply to all parts of the Dominion? What is the act? CANADIAN.

ANSWER.—The Medical Council of Alberta admits to its register any one who presents a certificate from the registrar of the University of Alberta, showing that the holder is duly qualified. A standard high-school education and a four years' course in a recognized medical college are required for those graduating prior to June 1, 1913. For those graduating after that date the preliminary education required must be equivalent to matriculation in the University of Alberta, and the applicant must have completed a five-year medical course, including the preliminary year in physics, chemistry and biology. For osteopaths the preliminary requirements and the examination in all the common subjects are the same as for physicians. Examinations are written and oral. The examination fee is $50; registration fee, $50; annual assessment, $2. The registrar of the Council is Dr. G. Macdonald, Calgary, Alberta.

In Saskatchewan the requirements are practically the same as in Alberta. The registrar of the Medical Council is Dr. G. A. Charlton, Regina, Saskatchewan.

The new Canadian practice act is now in effect and the register of the Medical Council of Canada was opened July 1 of this year. The act provides that any person already licensed in any of the provinces who has been in practice for ten years may register under certain conditions. Those licensed less than ten years may register when the ten-year period has been completed. Other candidates may, if otherwise qualified, take the examination of the Medical Council of Canada, the passing of which will entitle them to practice medicine in any part of the Dominion. The first Dominion examination will be held in Montreal, October 7 of this year.

INCONSISTENT PRESCRIPTION

To the Editor:—Please comment on the enclosed prescription as to compatibility and physiologic effects of the different ingredients.

K. I.	ʒ ii
Hydrarg. chlor.	gr. i
Tr. gelsemium.	ʒ i
Tr. aconite	m. xvi
Strych. sulph.	gr. ½
Chloral hydrate	ʒ iii
Liq. pot. ars.	ʒ i
Syr. tolu	
Aq. mentha pip. āā qs	ʒ ii

M. Sig.: ʒ i in aq q 3 hrs.

G. S. C.

ANSWER.—Such a prescription affords opportunity for much criticism. The presence of nine ingredients marks it at once as a specimen of disgraceful polypharmacy. There are many evident inconsistencies. The mixture of potassium iodid and mercuric chlorid forms a reagent for alkaloids which would probably precipitate the strychnin and might give rise to fatal poisoning. Perhaps the chloral hydrate is added as an antidote to possible strychnin poisoning. There is no reason for combining together such opposite agents as strychnin and tincture of aconite or tincture of gelsemium.

THEORY OF OSTEOPATHY AND CHIROPRACTIC

To the Editor:—I wish to inform myself thoroughly in regard to the actual theory and therapeutics of osteopathy and of chiropractic, so as to meet, intelligently, arguments made in favor of these cults by my patients. E. A. H., California.

ANSWER.—The following books and articles may be referred to:

OSTEOPATHY

Barber: Osteopathy, Janish, Kirksville, Mo., price $3.
Burns: Basic Principles of Osteopathy, Louisa Burns, Los Angeles, price $4.50.
Clark: Diseases of Women, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $5.
Craven: Physical Diagnosis, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price 25 cents.
Davis: Osteopathy, Chicago Medical Book Co., price $5.
Goetz: Osteopathy, Nature's Cure Co., Cincinnati, price, $2.

Hazzard: Practice of Osteopathy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $3.

Hulett: Principles of Osteopathy, Hulett, Cleveland, price $3.50.

Laughlin: Anatomy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $6.50.

McConnell and Jeal: Practice of Osteopathy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $5.

Michel: Arterial, Venous and Nervous Chart, Michel Co., Cleveland, price $3.

Murray: Osteopathy for the Physician, Charles Murray, Elgin, Ill., price $3.

Still: Philosophy of Osteopathy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $5.50; Research and Practice of Osteopathy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $6.

Tasker: Principles of Osteopathy, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $5.

Woodall: Osteopathic Gynecology, A. S. O. Book Co., 602 W. Jefferson St., Kirksville, Mo., price $3.50.

CHIROPRACTIC

What is Chiropractic? Transcript of evidence in State of Wisconsin vs. S. R. Janeheski. American Medical Association Press, 1911.

The Legal Aspects of Chiropractic, American Medical Association Press.

Requirements as to Having and Recording Licenses.—Violation of Statute by Chiropractics, THE JOURNAL, March 29, 1913, p. 1021.

Law Violated by Chiropractor, THE JOURNAL, April 12, 1913, p. 1181.

Construction of Medical Practice Act—Chiropractics not "Other Agency," THE JOURNAL, April 20, 1913, p. 1227.

Rice, G. W.: Pseudomedicine, THE JOURNAL, Feb. 3, 1912, p. 360.

McGee, R. P.: Chiro-Practice—What is It? *Denver Med. Times and Utah Medical Jour.*, May, 1912.

Constitutionality and Construction of Medical Practice Act—Chiropractor Violates Law, THE JOURNAL, July 28, 1911, p. 412.

Constitutionality of Medical Practice Acts. Chiropractic a Practice of Medicine, THE JOURNAL, Aug. 5, 1911, p. 501.

Another Court Holds Chiropractic a Practice of Medicine, THE JOURNAL, Sept. 9, 1911, 924.

Sufficiency of Indictment of Chiropractic, THE JOURNAL, Nov. 25, 1911, p. 1795.

LITERATURE ON COLEY'S TOXINS IN SARCOMA

To the Editor:—I wish to use Coley's toxin or Coley's antisarcoma serum in one of my cases. Will you please tell me where I can get it and how it should best be administered? I can find nothing definite concerning it in any literature that I have. A loan of any articles, reprints or magazines written in English would be appreciated and the literature will be promptly and carefully returned. J. E. SNYDER, M.D., Cooperstown, Ill.

ANSWER.—Erysipelas and prodigiosus toxins (Coley). Prepared by Parke, Davis & Co., Detroit, Mich. The preparation is described in N. N. R., 1913, page 236.

The toxins are injected in gradually increasing doses, at first in a part of the body removed from the tumor and later, if possible, into the tumor itself.

The following articles have appeared on this subject:

Hunt, E. R.: Case of Recurrent Carcinoma of Parotid Gland Treated with Coley's Fluid, *Lancet*, London, June 17, 1911; abstr., THE JOURNAL, July 15, 1911, p. 252.

Green, R. M.: Use of Coley's Toxins in Treatment of Sarcoma, *Boston Med. and Surg. Jour.*, July 6, 1911; abstr., THE JOURNAL, July 22, 1911, p. 341.

Coley, W. B.: Recent Cases of Inoperable Sarcoma Successfully Treated with Mixed Toxins of Erysipelas and Bacillus Prodigiosus, *Surg., Gynec. and Obst.*, August, 1911; abstr., THE JOURNAL, Sept. 9, 1911, p. 925.

Oliver, J. C.: Results Obtained from Use of Coley's Toxins in Treatment of Sarcoma, *Ohio State Med. Jour.*, Oct. 15, 1911; abstr., THE JOURNAL, Nov. 18, 1911, p. 1724.

Large, S. H.: Four Cases of Sarcoma of the Nose and Throat Treated with Coley's Toxins, *Cleveland Med. Jour.*, April, 1911; abstr., THE JOURNAL, March 27, 1911, p. 1015.

Hill, H. K.: Retroperitoneal Lymphosarcoma Treated with Coley's Fluid, *Arch. Pediat.*, September, 1912.

Greenwood, H. H.: Melanotic Sarcoma Treated with Coley's Fluid, *Lancet*, London, Sept. 28, 1912.

Duncan, R. B.: Treatment of Inoperable and Operable Sarcomatous Growths by Coley's Fluid, *Australian Med. Jour.*, March 2, 1912.

Miketta, F. H.: Osteosarcoma of Fourth Cervical Vertebra Treated by Coley's Serum, *Lancet-Clinic*, May 28, 1910.

CASE OF AMNIOTIC ADHESION

To the Editor:—Recently I had an obstetric case in which the head of the child was adherent to the placenta and the uterine wall. Are there reports of similar cases? What books or papers can I consult on the subject? R. VORSANGER, M.D., Chicago.

ANSWER.—Ballantyne's "Antenatal Pathology and Hygiene," ii, contains a full description of amniotic adhesions. Frequently the amniotic bands pass from the fetal side of the placenta to the head and so it appears that the head is adherent to the placenta. In these cases there are generally other malformations present. Such cases as reported should be described in detail and pictures taken of them. Then they might be of value in determining some of the problems of teratogenesis, that is, the origin of monsters.

POTASSIUM PERMANGANATE SOLUTION

To the Editor:—1. How much potassium permanganate is required to make a quart of 1:2,000 and 1:5,000 solutions? How is the amount of potassium permanganate determined in order to make any amount and of any strength of solution?

2. What health resorts are best for patients afflicted with kidney and liver diseases?

3. (*a*) How long after rupture of hymen can the carunculae myrtiformes be seen? (*b*) Is it possible to state with any degree of accuracy how long the hymen has been ruptured by presence or absence of carunculae myrtiformes? SUBSCRIBER.

ANSWER.—1. For a quart of a solution of 1:2,000 use 7½ grains, and for a quart solution of 1:5,000 use 3 grains. One quart is equivalent to 14,600 grains, so that 15 grains to the quart equals approximately 1:1,000.

2. Those with a mild equable climate.

3. (*a*) The carunculae myrtiformes are the results of labor and not of the rupture of the hymen. (*b*) No.

THE CAUSE OF "PINK-EYE"

To the Editor:—Kindly inform me whether the germ which causes "pink-eye" has been demonstrated, and if so, what it is. E. HOCHHEIMER, M.D., New York.

ANSWER.—"Pink-eye" is a popular term applied to an acute contagious conjunctivitis which is due to an organism first described in 1883 by Robert Koch and later by Weeks and hence called the Koch-Weeks bacillus. It is a very small organism, difficult to cultivate. Cultures of it reproduce the disease when placed on the human conjunctiva.

REMOVAL OF SILVER AND IODIN STAINS FROM FINGERS

To the Editor:—Often the fingers are accidentally stained by nitrate of silver, by tincture of iodin and by bacterial stains, much to the annoyance of the physician. Silver stains, recent or old, are effectually removed by tincture of iodin. Stains from the latter drug are immediately removed by aqua ammoniae. Many of the bacterial stains, as Loeffler's blue, gentian violet and carbol fuchsin are decolorized by acid alcohol.

P. G. SKILLERN, JR., M.D., Philadelphia.

ANSWER.—A solution of sodium thiosulphate is better than ammonia-water to remove iodin stains.

MEMBRANOUS CROUP AND LARYNGEAL DIPHTHERIA

To the Editor:—1. What is the prevailing opinion as to the identity of membranous croup and laryngeal diphtheria? 2. Is a membranous laryngitis always diphtheritic?

C. G. H., Arkansas.

ANSWER.—1. They are usually regarded as identical. 2. No. About one-seventh of the cases are due to other organisms, chiefly streptococci.

ANSTIE'S LIMIT IN ALCOHOLISM

To the Editor:—Please tell me what is understood as Anstie's limit in alcoholism. I meet the term in life insurance and cannot find it explained anywhere.

S. C. BROADSTREET, M.D., Mt. Pleasant, Texas.

ANSWER.—Anstie's limit is the amount of alcohol oxidized per day by the normal organism, and it is put at 1½ ounces.

RED CROSS INSIGNIA AND THE SPEED LIMIT

To the Editor:—Can the city authorities lawfully hold up a doctor's car, carrying a red cross, and fine the owner for exceeding the speed limit? G. A. Z.

ANSWER.—Yes.

The Influence of Mucomembranous Colitis on Health.—Mucomembranous colitis is not a disease that directly destroys life, but it kills health and happiness. Patients who suffer from it and go unhealed are apt to drift into a state of chronic invalidism, never really well, spending most of their time on the sofa, and with all their thoughts, as some one has said, revolving round the umbilicus—a condition which is sometimes worse than death.—Robert Hutchison in *Clinical Journal*.

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Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICO-LEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

MODEL BILL FOR THE CONTROL OF OPHTHALMIA NEONATORUM

The Committee on Prevention of Blindness, one of the subcommittees of the Council on Health and Public Instruction, was originally organized as a Committee on Ophthalmia Neonatorum. Efforts to control this dreadful disease have always been prominently in the minds of the members of this Committee, which, in conjunction with the Medico-Legal Bureau of the Council, has prepared a preliminary draft of a model bill on this subject, the text of which appears below. This bill will be widely distributed for criticism, revised and redrafted in the light of the criticisms and suggestions received, in the hope of evolving a bill which may be endorsed as a standard by the American Medical Association and other bodies interested in public health. It should be clearly understood that this is the first draft of this measure and that criticisms are not only expected, but are earnestly desired.

A BILL FOR AN ACT ENTITLED AN ACT FOR THE PREVENTION OF BLINDNESS FROM OPHTHALMIA NEONATORUM; DEFINING OPHTHALMIA NEONATORUM; DESIGNATING CERTAIN POWERS AND DUTIES AND OTHERWISE PROVIDING FOR THE ENFORCEMENT OF THIS ACT

SECTION 1. Ophthalmia Neonatorum Defined.—Any condition of the eye, or eyes, of any infant shall, independent of the nature of the infection, be known as ophthalmia neonatorum, in which there is any inflammation, swelling or redness, in either one, or both eyes of any such infant, either apart from, or together with, any unnatural discharge from the eye, or eyes, of any such infant at any time within two weeks after the birth of such infant.

SECTION 2. Duties of Physicians, Midwives, Etc.—It shall be the duty of any physician, surgeon, obstetrician, midwife, nurse, maternity home, or hospital of any nature, parent, relative, and any person or persons attendant on, or assisting in any way, whatsoever, any woman at childbirth, or attendant on, or assisting in any way, whatsoever, any infant, or the mother of any infant, at any time within two weeks after childbirth, knowing the condition, hereinabove defined, to exist, and within six hours thereafter, to report such fact, as the State Board of Health shall direct, to the local health officer of the city, town, village, or whatever other political division there may be, within which the mother of any such infant may reside.

SECTION 3. Duties of the Local Health Officer.—It shall be the duty of the local health officer:

1. To investigate each case as filed with him in pursuance with the law, and any other such case as may come to his attention.

2. To report all cases of ophthalmia neonatorum, and the result of all such investigations as he shall make, as the State Board of Health shall direct.

3. To conform to such other rules and regulations as the State Board of Health shall promulgate for his further guidance.

SECTION 4. Duties of the State Board of Health.—It shall be the duty of the State Board of Health:

1. To enforce the provisions of this act.

2. To promulgate such rules and regulations as shall, under this act, be necessary for the purpose of this act, and such as the State Board of Health may deem necessary for the further and proper guidance of local health officers, etc.

3. To provide for the gratuitous distribution of a scientific prophylactic for ophthalmia neonatorum, together with proper directions for the use and administration thereof, to all physicians, midwives, and the like, as may be engaged in the practice of obstetrics, or assisting at childbirth.

4. To furnish prompt and gratuitous treatment to any infant infected with ophthalmia neonatorum, and to the mother of such infant as well; provided that gratuitous treatment shall not be furnished either to any infant, so infected, nor to its mother, should either, or both, such infant and its mother be under the care of a regularly qualified physician; provided further that the State Board of Health shall defray the expense of such treatment out of such sum as may be appropriated for its use.

5. To print and publish such further advice and information concerning the dangers of ophthalmia neonatorum, and the necessity for prompt and effective treatment thereof, as may be deemed fit.

6. To furnish copies of this law to all physicians, midwives, and the like, as may be engaged in the practice of obstetrics, or assisting at childbirth.

7. To keep a proper record of any and all cases of ophthalmia neonatorum, as shall be filed in their office in pursuance with this law, and as may come to their attention in any way, and to constitute such records a part of the annual report to the governor and the legislature.

8. To report any and all violations of this act as may come to their attention, to the prosecuting attorney of the district wherein said misdemeanor may have been committed, and to assist said official in any way possible, such as by securing necessary evidence, etc.

SECTION 5. Duties of Maternity Homes, Etc., Physicians, Etc.—It shall be the duty of all maternity homes, and any and all hospitals, etc., to maintain such records of cases of ophthalmia neonatorum as the State Board of Health shall direct. It shall be the duty of any and all maternity homes, hospitals, public and charitable institutions, midwives and the like, in addition to reporting as hereinbefore enacted, to advise, prescribe and employ, in the treatment of all cases of ophthalmia neonatorum, such prophylactic as the State Board of Health shall direct.

SECTION 6.—Violation of Act a Misdemeanor; Knowledge.—The failure of any and all physicians, midwives, etc., as hereinabove set forth, to report as herein prescribed, or the failure of any hospital to record, as hereinbefore enacted, or the failure of any midwife, and the like, to treat as the State Board of Health shall have directed, any and all cases of ophthalmia neonatorum, as herein prescribed, and, under such circumstances as are herewith set forth, or any or all of such violations, as the case may be, shall constitute a misdemeanor under this act, shall, on a conviction thereof, be fined, for a first offense, not to exceed $50; for a second offense, not to exceed $100, and for a third offense, and thereafter, not to exceed $200 for each violation, and, if the accused be a midwife or the like, such person shall, in the discretion of the court, suffer a revocation of license, or both fine and revocation, as the court may see fit, and if the accused be a maternity home, or the like, duly incorporated under the laws of the state, the court may, in its discretion, order a revocation of its charter, and any collusion between any official and any person, or between any others herein named, to misstate or conceal any facts which, under this act, it is essential to report correctly, shall like wise constitute a misdemeanor, and the accused shall, on a conviction, suffer a penalty such as is hereinabove enacted. The act of the agent in the scope of his employment shall be deemed the act of the principle. (Any, and all, cases of ophthalmia neonatorum, or the resultant blindness therefrom, on which the accused may have been in attendance, as hereinabove set forth, and of which no proper record has been made as herein enacted, shall be taken as *prima facie* evidence of the infection and of the intent on the part of the accused to neglect to make a proper record of such case.) It shall be the duty of the state's attorney, for the proper district, to prosecute for all misdemeanors as herein prescribed.

SECTION 7. Appropriation.—The sum of $———— shall be annually appropriated for the use of the State Board of

Health in enforcing and carrying out the provisions of this act. Any and all necessary and legitimate expenses that may be incurred in prosecuting a case under this act, shall, on proper showing, be met by the State Board of Health out of this appropriation. In addition thereto, all fines and penalties recovered hereunder, shall be paid into the state treasury and shall constitute a special fund for the uses and purposes of the State Board of Health as herein enacted.

SECTION 8. Emergency.—An emergency existing, this act shall take effect on its passage, as by law prescribed.

SECTION 9.—Repealing.—All acts and parts of acts, in conflict herewith are hereby repealed.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

MASSACHUSETTS: State House, Boston, September 9-11. Sec., Dr. Walter P. Bowers, Room 159, State House.

MISSOURI: Coates House, Kansas City, September 2-4. Sec., Dr. J. A. B. Adcock, State House, Jefferson City.

NEW YORK: September 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

Ohio April and July Reciprocity Reports

Dr. George H. Matson, secretary of the Ohio State Medical Board reports that at the meetings held April 15 and July 1, 1913, 32 candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY APRIL 15, 1913.

College	Year Grad.	Reciprocity with
Howard University, Washington	(1912)	W. Virginia
College of Physicians and Surgeons, Chicago	(1905)	Indiana
Rush Medical College	(1912)	Minnesota
Kansas Medical College	(1905)	Kansas
College of Physicians and Surgeons, Baltimore	(1910) (1911)	W. Virginia
University of Maryland	(1912)	Maryland
University of Michigan, Department of Medicine and Surgery	(1905) (1909) (1911) (1912)	Michigan
University of Michigan, Homeopathic College	(1912)	Michigan
Eclectic Medical Institute, Cincinnati	(1909)	Arkansas
University of Pennsylvania	(1909)	Penna.
University of Pittsburgh	(1911)	Michigan
Western University of Pennsylvania	(1901)	Penna.
Jefferson Medical College	(1908)	Penna.

LICENSED THROUGH RECIPROCITY JULY 1, 1913

College	Year Grad.	Reciprocity with
Georgetown University	(1911)	Dist. Colum.
Indiana Medical College	(1906)	Indiana
Baltimore Medical College	(1902)	W. Virginia
College of Physicians and Surgeons, Baltimore	(1911)	Maryland
University of Maryland	(1904)	Maryland
Maryland Medical College	(1903)	Penna.
University of Michigan, Department of Medicine and Surgery	(1903) (1910) (1912)	Michigan
Barnes Medical College	(1904)	Missouri
Cleveland Homeopathic Medical College	(1904)	Penna.
Jefferson Medical College	(1912)	Penna.
University of Pennsylvania	(1912)	Penna.
Jefferson Medical College	(1912) Penna.; (1912)	New Jersey
Medico-Chirurgical College of Philadelphia	(1909)	Penna.

Delaware June Report

Dr. Henry W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover, June 17-19, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Jefferson Medical College (1912) 85.4, 91.5; (1913) 81.8, 82.3, 83.7		
University of Pennsylvania	(1913)	80.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Maryland	(1911)	District of Columbia
University of Pennsylvania	(1900)	Maryland (1910) Penna.
Hahnemann Medical College of Philadelphia	(1883)	Penna.

Kentucky June Report

Dr. J. N. McCormack, secretary of the Kentucky State Board of Health, reports the written examination, held at Louisville, June 3-5, 1913. The number of subjects examined in was 15; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 62 of whom 51 passed, including 3 osteopaths, and 8 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1913)	89
Hering Medical College	(1912) 80; (1913) 87, 89	
University of Louisville (1910) 72; (1912) 75, 77; (1913) 70, 76, 77, 79, 79, 79, 80, 80, 80, 81, 82, 83, 83, 83, 83, 84, 84, 84, 85, 85, 85, 85, 86, 86, 86, 86, 86, 87, 87, 87, 88, 89, 91		
Johns Hopkins University (1911) 88; (1912) 85; (1913) 84, 86		
Ohio-Miami Medical College	(1913)	87
Meharry Medical College	(1913)	77
Vanderbilt University	(1912) 83; (1913) 82, 84, 85	

FAILED

College	Year Grad.	Per Cent.
Bennett Medical College	(1913)	57
University of Louisville	(1909) 42; (1911) 55; (1912)	66
Louisville National Medical College	(1912) 53, 61,	61
Meharry Medical College	(1913)	70

Minnesota June Report

Dr. Thomas McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written, oral and practical examination held at the State University, Minneapolis, June 3-6, 1913. The number of subjects examined in was 11; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 52, of whom 51 passed and 1 failed. Eight candidates were licensed through reciprocity. The following colleges were represented.

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1912)	83.1
Rush Medical College, Chicago	(1913)	82.9
University of Indianapolis	(1909)	83.1
Harvard Medical School	(1905)	89.1
University of Minnesota (1912) 87.5; (1913) 81.1, 81.6, 83.1, 84.2, 84.5, 84.6, 85.1, 85.1, 85.2, 85.3, 85.3, 85.7, 86.1, 86.1, 86.2, 86.3, 86.3, 86.3, 86.4, 86.4, 86.9, 86.9, 87, 87.3, 87.5, 87.5, 87.9, 88, 88.4, 88.8, 88.8, 88.8, 89.4, 89.6, 89.8, 90, 91.2, 91.5, 91.9, 92, 93.3.		
Barnes Medical College	(1909)	82.8
University of Paris	(1904)	75.9
University of Toronto, Ontario	(1909)	84
University of Christiania, Norway	(1912)	77
University of Edinburgh, Scotland	(1910)	80.9

FAILED

College	Year Grad.	Per Cent.
Meharry Medical College	(1912)	70.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Illinois	(1911)	Illinois
Chicago College of Medicine and Surgery	(1912)	Illinois
Northwestern University Medical School	(1910)	Illinois
Detroit College of Medicine	(1912)	Michigan
University of Michigan, College of Medicine and Surgery	(1911)	Michigan
University of Minnesota, College of Medicine and Surgery	(1911)	N. Dakota
Marion-Sims College of Medicine	(1898)	Illinois
University of Copenhagen	(1888)	Iowa

Connecticut July Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written and practical examination, held at New Haven, July 8-9, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 42, of whom 22 passed and 20 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale Medical School (1907) 76.5; (1908) 77.9; (1912) 84, 87.5; (1913) 79.5, 85.8		
College of Physicians and Surgeons, Baltimore	(1913)	80.2, 82.8
Johns Hopkins University	(1913)	87.9
Maryland Medical College	(1913)	75.6
Harvard Medical School	(1909) 85.3; (1912)	81.5
Dartmouth Medical School	(1913)	80.5
Columbia University, College of Physicians and Surgeons, New York (1883) 84.9; (1895) 79.1; (1913) 82.5		
University and Bellevue Hospital Medical College	(1913)	84.8
Long Island College Hospital, New York	(1912)	86
Jefferson Medical College	(1913)	78.9, 79.1
University of Vermont	(1913)	77.1, 81.8

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FAILED		
Yale Medical School	(1913)	72.9
Howard University, D. C.	(1912)	73.9
Georgetown University, D. C.	(1912)	70.9
University of Louisville	(1912) 55.9,	71.2
University of Maryland	(1912) 68.1,	68.7
Baltimore Medical College	(1909)	66.8
College of Physicians and Surgeons, Baltimore (1911) 65.2; (1912)		67.1
Maryland Medical College (1910) 57.5; (1911) 63.2; (1912) 56.9, 69.2; (1913) 44.6, 60.2, 63.7, 67.5		
University of Vermont	(1912) 67.9; (1913)	73.2

Book Notices

EINFÜHRUNG IN DIE HÖHERE MATHEMATIK FÜR NATURFORSCHER UND ÄRZTE. Von Dr. J. Salpeter. Price, 12 marks. Paper. Pp. 336 with 147 illustrations. Jena: Gustav Fischer, 1913.

This work is essentially a text-book for beginners in the differential and integral calculus. It differs from the current text-books of that subject intended for students of mathematics chiefly in the greater number of applications of the mathematical results to problems of physics, chemistry and allied sciences. In this respect it is decidedly an interesting work. During the past few decades a marked tendency has been generally noticeable on the part of writers in this field to seek to enhance the interest of the abstract theory by illustrative examples showing how the theory can be applied under diverse concrete conditions. The great obstacle in the way has been the fact that such illustrations are really illuminating only to one who is well acquainted with the field in which the application is made, and that there exists only a limited number of concrete situations in natural sciences which are so simple that they can readily be made intelligible to the average reader who has no technical knowledge of the sciences in question, and which at the same time lead to mathematical formulations sufficiently complex to constitute effective illustrations for the various divisions of so extensive a subject as the calculus. Salpeter has succeeded in getting together possibly an unprecedentedly large number of such illustrations, and for this reason his work will prove interesting and helpful to those who have already made some study of the calculus, as well as to beginners. However, it is quite possible that the beginner might find himself distracted rather than helped in his first study of the basic principles of the calculus by an attempt to form an image of so large a number of concrete and more or less unfamiliar physical situations. To the physician, in the most restricted sense of the word, the book brings no message; its appeal is rather to him as physicist, physiologist, chemist or man of general culture.

SKIN-GRAFTING FOR SURGEONS AND GENERAL PRACTITIONERS. By Leonard Freeman, B.S., M.A., M.D., Professor of Surgery in the Medical Department of the University of Colorado. Cloth. Price, $1.50. Pp. 139, with 24 illustrations. St. Louis: C. V. Mosby Company, 1912.

This little monograph presents in a concise manner the general subject of skin-grafting. The various methods of grafting, the advantages and disadvantages of each, and the particular conditions under which each is most applicable, are well outlined. The grafting of animal membranes of various kinds to the human body is described and the results thus far obtained detailed. Experiments as well as practical experience show unmistakably the advantages of autografts over all other methods. It is an instructive and interesting little volume.

MALINGERING AND FEIGNED SICKNESS. By Sir John Collie, M.D., J.P., Medical Examiner, London County Council. Assisted by Arthur H. Spicer, M.B., B.S., D.P.H. Cloth. Price, $3 net. Pp. 340, with 44 illustrations. New York: Longmans, Green & Co., 1913.

Malingering is a condition that many physicians in their daily practice fail to take into consideration. Even those who frequently come in contact with cases of injury due to accident for which compensation or indemnity may be claimed often fail entirely to recognize malingering, even when it is present in some of its most common forms. Since workmen's compensation acts and accident indemnity insurance are becoming more common, it is necessary for physicians to pay more attention to this subject in order that justice may be done both parties. There are many forms of malingering and some of those practicing it are very clever, so that it takes an exceedingly keen diagnostician to detect the fraud. This little volume is not only timely, but it is also interestingly written. The author has had an unusually large experience in this line of work and exhibits a shrewdness in making deductions which shows great familiarity with the arts of the malingerer and deep insight into human nature. There is not only conscious malingering which is actually dishonest and malicious, but there is also unconscious malingering by honest persons. The physician should be able to recognize all forms wherever and whenever found. This book will be of great help to the physician who is called on to detect such cases.

ORGANIC AND FUNCTIONAL NERVOUS DISEASES. A Text-Book of Neurology. By M. Allen Starr, M.D., Ph.D., L.L.D., Professor of Neurology, College of Physicians and Surgeons, New York. Fourth Edition. Cloth. Price, $6 net. Pp. 970 with 353 illustrations. Philadelphia: Lea & Febiger, 1913.

In Starr's standard text-book on nervous diseases the general practitioner almost always finds the desired information stated in a few terse paragraphs, while in some other works he may have to wade through irrelevant material before reaching a rather indefinite statement. The great secret of Starr's success is his direct and dogmatic style; in reading a page in his book one almost imagines that the author is lecturing to the reader. While no radical changes can be discovered in this the fourth edition of the work, yet here and there improvements are noted. Especially commendable is the author's attitude toward the discussion of the theories of the neuroses and psychoneuroses. For instance, though no disciple of Freud's views, he does not disdain to at least state them and make personal comment. Among many other valuable articles under the functional diseases, the one on psychasthenia is a masterpiece of condensation. The criticism made in a previous review that the author had become so fond of the organic nervous diseases that the functional disturbances were somewhat meagerly treated by him, must now be withdrawn. In this edition even the functional nervous diseases have received adequate consideration.

DIE LEBERKRANKHEITEN. Für Studierende und Aerzte. Von Dr. C. A. Ewald, Geh. Med. Rat, Professor ord. hon. an der Kgl. Friedrich-Wilhelm-Universität. Paper. Price, 10 marks. Pp. 275, with 44 illustrations. Leipsic: Georg Thieme, 1913.

This monograph is a little fuller than many of the text-book articles on diseases of the liver. It embodies the results of Ewald's forty years of experience as a physician, twenty-five of which have been passed at the Augusta Hospital in Berlin. It is this clinical experience that constitutes the best feature of the book. Many of the illustrations are from material from Ewald's own cases and are good. The discussion of questions of physiology and pathology can hardly be called very thorough, nor is there evidence of that exhaustive search of the literature that one might expect in a monograph of this kind. While the book is to be commended it is hardly of the same grade of excellence as the same author's earlier work on diseases of the stomach. Perhaps this is due to the fact that that work contained more of original observation. The subject also had at that time the charm of freshness and the author more of the vigor and positiveness of young manhood.

TREATMENT AFTER OPERATION. By William Turner, M.S., F.R.C.S., Senior Surgeon to the "Dreadnought" Seamen's Hospital, Greenwich, and E. Rock Carling, B.S., F.R.C.S., Surgeon to the "Dreadnought" Seamen's Hospital, Greenwich. With a Chapter on the Eye by L. V. Cargill, F.R.C.S., Senior Ophthalmic Surgeon, King's College Hospital. London Medical Publications. Cloth. Price, $3.75. Pp. 247, with 55 illustrations. New York: Oxford University Press, 1912.

This manual is intended by the authors to furnish practitioners, house surgeons, senior nurses and students with a guide for the after-treatment of operative cases. It is

eminently practical; there is no waste of words, the text being a direct statement of the means found satisfactory in the practice of the authors. Many useful formulas are given, and all directions and descriptions are explicit. The authors are conservative as to the length of time to be spent in bed by patients who have undergone section of the abdominal wall, and advocate a longer period than is generally considered necessary in this country; but, if this be an error, it is on the safe side. The value of the work is considerably enhanced by the inclusion of a section devoted to the care of patients after operations on the eye. This is written by Cargill and is thoroughly modern and complete. Altogether we should say that the authors have succeeded in producing a book exceedingly useful to those for whom it was specially written, and also well worth perusal by the surgeon.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

July, LXX, No. 1, pp. 1-279

1 Dissimilar Heredity in Mental Disease. A. J. Rosanoff, Kings Park, N. Y.
2 *Stastistic Studies in Syphilis with Wassermann Reaction and General Paralysis. F. S. Hammond, Trenton, N. J.
3 *Insanity and Race. H. M. Swift, Portland, Maine.
4 Blood in Pellagra. J. C. Bardin, Petersburg, Va.
5 Prison Psychosis. A Pseudonym? F. E. Bowers, Michigan City, Ind.
6 Pathologic Histology of Cortex in Psychoses. A. Alzheimer, Breslau.

2. **Syphilis and Wassermann Reaction.**—The entire population of the New Jersey State Hospital at Trenton, which is representative of the rural type of general population of the state, was examined by Hammond by means of the Wassermann syphilis reaction, in all 1,583 individuals being tested. Seventy of these were cases of general paralysis, and 1,513 were cases otherwise diagnosed. Of the cases not general paralysis, 1,472 reacted negatively and forty-one positively, on which basis there is a percentage of 2.7 latent lues in the total hospital population not paresis. Including cases of general paralysis about 7 per cent. of all individuals of both sexes examined, and about 10 per cent. of all males were found to be infected with syphilis as judged by the serum reaction.

These relatively low figures, as compared with those of some previous more limited investigations in institutions, Hammond believes are solely and wholly accounted for by the type of general population and rural environment from which the individuals examined originally came, and further, that in the difference of environment is found the explanation for the discrepancies in results among these previous investigations themselves. Hammond believes, furthermore, that this investigation, both in itself and by comparison with some of the more reliable previous figures, shows that the relative prevalence of syphilis in city and country is in general exactly two to one. A careful analysis of all data, including age, sex, color, nationality, civil condition and type of psychosis leads to the conclusion that syphilis among the insane is no more frequent in occurrence and differs in no particular in its distribution from that found in any general community; that in fact investigations as to the frequency of syphilis among the insane offers the most convenient method of accurately determining the figures for any corresponding general population, and it is for this reason that Hammond believes that the prevalence of lues in the entire general adult population of the state of New Jersey is 7 per cent.

Only one type of psychosis other than general paralysis (and cerebral lues) has been found to be definitely related to syphilis as cause and effect in either direction. This is the type of focal brain disorder which occurs in middle life as a result of vascular sclerosis. This group was found to constitute 16 per cent. of all the arteriosclerotic mental disorders among men and which, although not symptomatically differentiated from other similar focal brain diseases, has an entirely different etiology which may be demonstrated by biologic methods. In the field of general paralysis comparison of biologic, cytologic and chemical findings has pointed out that not only are the processes thus indicated usually found in association, but that there is at least as much evidence for the belief that all are dependent on one and the same mechanism, viz., the inflammatory process of the central organ, as for the conclusion reached by others that each is separate and independent. Hammond's experience in this series with the original Wassermann technic and that of the Noguchi modification has shown that with alcoholic extract antigen the Wassermann test gave a 5 per cent. error of deficiency, and the Noguchi test a 2 per cent. error of excess, and that reliable results are only to be obtained by the use of both methods in combination.

3. **Insanity and Race.**—Swift summarizes his study by stating that insanity occurs with relatively greater frequency among the population of foreign birth and parentage than among native stock, and from this last it may be inferred that, associated with the three great causes of insanity, heredity, alcohol and syphilis, there is operative in America another potent factor in the overfilling of our public asylums, namely, immigration.

Annals of Surgery, Philadelphia

August, LVIII, No. 2, pp. 145-288

7 *Surgery of Pancreas. W. J. Mayo, Rochester, Minn.
8 Pancreatic and Peripancreatic Lymphangitis. J. B. Deaver and D. B. Pfeiffer, Philadelphia.
9 *Laryngectomy for Cancer. G. W. Crile, Cleveland.
10 Excision of Both Lobes of Thyroid for Cure of Exophthalmic Goiter. W. S. Halsted, Baltimore.
11 *Partial Occlusion of Thoracic and Abdominal Aortas by Bands of Fresh Aorta and of Fascia Lata. W. S. Halsted, Baltimore.
12 *Surgery of Pulmonary Artery. W. Meyer, New York.
13 Sarcoma of Chest Wall. F. B. Lund, Boston.
14 Acute Perforating Sigmoiditis in Children: Report of Two Cases. J. Ransohoff, Cincinnati.
15 Excision of Infarct in Acute Hematogenous Infections of Kidney. L. W. Hotchkiss, New York.
16 Technic of Nephrolithotomy, Pyelolithotomy and Ureterolithotomy. J. H. Gibbon, Philadelphia.
17 Rupture of Bladder: Report of Three Cases. G. Woolsey, New York.
18 Sarcoma of Stomach. C. L. Scudder, Boston.
19 Surgical Aspects of Purpura. J. F. Mitchell, Washington, D. C.
20 Aneurysm of Internal Iliac. A. MacLaren, St. Paul, Minn.

7. **Surgery of Pancreas.**—In 448 resections of the stomach for benign and malignant diseases up to Dec. 31, 1912 (W. J. and C. H. Mayo) the average mortality was 10 per cent. In about 8 per cent. of these cases the pancreas was injured and the average mortality was 11 per cent. In none of these operations, however, was the main pancreatic duct reached, usually only a superficial piece was removed from the surface at a point where the pancreas was adherent to the diseased stomach. The bleeding was usually free and best controlled by catgut on a curved needle. It was noted that in these cases the pancreas had a fibrous capsule, the result of the localized peritonitis.

In thirty-one splenectomies performed in the Mayos' clinic the tail of the pancreas was injured three times, owing to the fact that the tail passes with the splenic vessels well up into the hilum of the spleen. In one case half the pancreas was resected for tumor. The patient made a good recovery, and remains well. The tumor which had the external characteristics of a malignant growth, proved on section to be a benign thick-walled trabeculated cyst buried in sclerosed pancreatic tissue.

9. **Laryngectomy for Cancer.**—In Crile's twenty-seven laryngectomies there were two deaths, and these two were apparently the most promising cases of all. The prognosis in these cases seemed so favorable that he ventured to discard the full preliminary preparations. In one case he made no preliminary protective operation of any kind, and the patient died at the end of five weeks with mediastinal abscess. In

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the other case he made a preliminary gauze packing in the neck around the trachea, but did not perform a preliminary tracheotomy. In this case he brought the isolated upper end of the trachea forward to the skin and anchored it. The entire isolated portion necrosed, as did also a portion of the trachea beyond the isolated part. As a result pus was inhaled into the respiratory tract below the level of the sternum. The necropsy showed no pneumonia and no mediastinitis, but a septic tracheitis and bronchitis. Death was the result of local absorption, and of absorption from the trachea and from the bronchial mucosa.

This case demonstrated most conclusively the efficiency of the granulation barrier which is created by a preliminary iodoform packing. Crile is convinced that had he made a preliminary tracheotomy, or had he allowed the trachea to remain in its bed, the patient would surely have recovered.

In sixteen of these twenty-seven laryngectomies for cancer the laryngeal box was so choked with the growth that tracheotomy was required to prevent suffocation. Most of the patients gave a long history of hoarseness followed by gradual, though intermittent, obstruction to respiration. In two cases there was associated lues. One of these last two cases illustrates well the clinical difficulty of diagnosis. The lesion was first diagnosed correctly as luetic, and under a course of treatment the greater part of the growth disappeared. The residual growth, however, showed a progressive tendency, and was later diagnosed as cancer. Laryngectomy was performed and the patient is now alive and well, more than three years since his operation. The special lesson of this case is that cancer of the larynx, like cancer of the tongue, may follow local luetic lesions. There is danger, therefore, that the hope of a luetic cure may defer too long the laryngectomy which is the only chance for the cure of the cancer. As the lymphatics are involved in extrinsic cancer, a much wider dissection is required. Operation in cases of extrinsic cancer is but a palliative remedy, but even in such cases total laryngectomy is advised, because local recurrence comes more surely and more quickly if one cuts into the growth.

11. **Partial Occlusion of Aorta by Fresh Tissue.**—April 29, 1912, Halsted operated on two dogs, partially occluding the aorta of one of them with a spiral aortic band and of the other with a cuff cut from the same vessel. Strips of aorta were employed rather than of fascia lata, for example, because he hoped that the elastic tissue, in case it did not endure, might at least serve its purpose for a time sufficient to cure an aneurysm. At the end of two months one of the dogs was killed and the cuff which had been used in this experiment was apparently organized and had not stretched to any appreciable extent. Above the cuff the aortic pulse was forcible, but below the constriction it was very feeble, though countable and accompanied by a thrill. The other dog operated on at the same time and in the same manner, except that a spiral band of aorta instead of a cuff had been employed, died (cause of death unascertained) about three weeks after the operation. In this instance the aorta had been almost completely occluded by the spiral aortic strip. The welt-like band had not stretched and seemed to be organized. The aorta, on being split longitudinally, was seen to be greatly wrinkled and almost occluded at the site of the band. Sections of the specimens indicated that the elastic coats of the bands as well as of the included artery were intact.

During the winter of 1912-13 Halsted made about twenty-five similar experiments with encouraging results. He has learned, however, that whereas the spiral bands seem to be perfectly safe there is danger in the employment of the cuffs. In two instances of twelve or more experiments, one of the mattress sutures taken to hold the flaps of the cuffs together cut part way through the cuffs and thus, being brought in contact with the aortic wall, wore a minute hole in the vessel, through which the animal bled to death. Such an accident can hardly happen with the employment of the spiral strip, for not only is the strain on the stitches very slight when this form of band is used, but even if it were so great that a thread might cut through the spiral at any point, it could hardly be brought to bear on the aorta in such way as to wear into its wall. To each end of the band of fresh tissue a narrow tape is sewed to facilitate the manipulation of the transplant, which is wound twice about the aorta. When one or two stitches have been taken at one end to hold the contiguous edges of the spiral together at this point, the other end of the strip is pulled on until the aorta is occluded to a little more than the desired amount, and then two additional stitches are taken to maintain the constriction.

Within the past few weeks Halsted has examined the bands of aorta, fascia lata and chromicized submucosa which had been wound about the aorta last autumn and winter. In two instances in which considerable constriction of the aorta had been made about four months previously, kymographic tracings of the blood-pressure in the femoral and carotid arteries were made. There was no diminution in the femoral pressure, and on investigating the band it was found in each instance to have relaxed and to have been partially absorbed. In dogs operated on as long as seven months ago there was a considerable absorption of the band; and in one instance only a trace of it remained. One spiral band which had been applied so as to make almost total occlusion seven months before seemed microscopically to be well preserved, but it no longer restricted the aorta, the lumen of which was completely restored, and whose underlying wall was apparently normal.

12, 13.—Abstracted in THE JOURNAL, June 21, pp. 2024 and 2025.

Boston Medical and Surgical Journal

August 14, CLIX, No. 7, pp. 221-260

21 Sphincteric Atrophy: Causes, Consequences and Treatment. R. W. Jackson, Fall River, Mass.
22 *Rôle of "Family Clusters" in the Prevalence of Pulmonary Tuberculosis. C. C. Maccorison and N. B. Burns, Reading.
23 *Diagnosis of Typhoid on Admission to a Hospital. G. C. Shattuck and C. H. Lawrence, Boston.
24 Experimental Scorbutus and the Roentgen-Ray Diagnosis of Scorbutus. F. B. Talbot, W. J. Dodd and H. Peterson.

22. **"Family Clusters" in the Prevalence of Pulmonary Tuberculosis.**—In reviewing the records of 1,300 admissions to the North Reading State Sanitarium in the three and a half years of this institution's existence the authors found therein an interesting study in data relating to the pedigrees of certain cases. They learned that in 134 distinct examples there occurred the incidence of at least three cases of pulmonary tuberculosis in a single family. These groups of infected people they have designated as "family clusters." A study of these family groups leads them to believe that the domiciliary distribution of tuberculosis may be due wholly or in part to the establishment of foci of infection following carelessness of individuals, usually adult open cases with the disease. The swiftest channels for spread of disease and for furtherance of its activity is through the family lines. They do not propose positive remedies for the eradication of the family cluster evil because it lies too much enmeshed with other social misfortunes to offer one opportunity to isolate and exterminate easily the trouble.

At the sanatorium, in the matter of preventive tactics, they come to the point of contact with the family cluster evil in this way: A far-advanced consumptive, incurable and hopelessly ill, beseeches his family to take him home. The family, overcome with sympathy and fraternal pity, is inclined to accede to the patient's wishes, even though there are only scant means with which to care for him properly at home, and what is most important, no safe place to house him in such a way as to preclude danger of contaminating the several young children of the family. If the family is patiently remonstrated with, and if they can be impressed with the full significance of the family cluster danger, some success may be met with in preventing a further extension of phthisis in their midst.

23. **Diagnosis of Typhoid on Admission to Hospital.**—Shattuck and Lawrence urge that typhoid should be suspected until some other diagnosis seems reasonably certain. Meanwhile, these patients should be treated under precautions to

prevent the possible spread of infection. If this be done, it is possible to avoid risk of spreading infection in nearly all instances. In their series of 100 non-typhoid patients of fourteen years of age or older in which typhoid was suspected, bronchitis, broncho-pneumonia and influenza represent 29 per cent., or nearly one-third of the whole, undiagnosed fevers 15 per cent. and gastro-enteritis, diarrhea and colitis 12 per cent. Absence of rose-spots at the first examination has little weight for diagnosis. The same is true of splenic enlargement when not demonstrable by palpation, and of the Widal test when negative.

A positive Widal test is regarded as of the greatest importance. Typical rose-spots are very important and a palpable spleen is a valuable indication of typhoid, but is common in various conditions simulating typhoid. Atypical rose-spots are valueless for diagnosis. Absence of leukocytosis in a febrile disease strongly suggests typhoid. A white-count below 5,000 is a valuable indication of typhoid fever, and is unusual in conditions simulating typhoid. A white-count above 9,000 is presumptive evidence against typhoid. Bronchitis has no weight *per se* either for or against the diagnosis of typhoid fever. Ordinary bronchitis patients, as a rule, entered the hospital during the first week, and typhoid with signs of bronchitis generally during the second week of illness. Congestion of the bases of the lungs, when present in febrile disease uncomplicated by cardiac insufficiency, points to typhoid. The temperature in typhoid is seldom below 101 F., whereas in other conditions simulating typhoid the temperature is commonly below 101 F. In typhoid, the pulse-rate is more apt to be low in proportion to the temperature than in other diseases.

Bulletin of American Academy of Medicine, Easton, Pa.

August, XIV, No. 4, pp. 256-328

25 Physician of the Future. R. L. Wilbur, San Francisco.
26 Exclusion of Immigrants Affected with Diseases of Skin. L. D. Bulkley, New York.

Journal of Experimental Medicine, New York

August, XVIII, No. 2, pp. 113-217

27 *Studies on Circulation in Man: Blood Flow in Hands (Mainly) in Cases of Anemia. G. N. Stewart, Cleveland.
28 *Intestinal Obstruction. J. A. Hartwell, New York.
29 Experimental Study of Late Kidney (Glomerular) Lesions Caused by Crotalus Venom. R. M. Pearce, Philadelphia.
30 *Visceral Organisms. A. Carrel, New York.
31 Cerebrospinal Fluid in Syphilis. A. W. M. Ellis and H. F. Swift, New York.
32 Growth of Tissue in Acid Media. P. Rous, New York.
33 Selective Bactericidal Action of Methylene Blue. J. W. Churchman, New Haven.
34 *Relation of Rate of Absorption of Epinephrin to Its Glycosuric and Diuretic Effects. I. S. Kleiner and S. J. Meltzer, New York.
35 Relation between Proteid Cleavage Products and Anaphylaxis. J. Auer and D. D. Van Slyke, New York.

27. **Circulation in Man.**—In the cases of anemia studied (pernicious anemia, chlorosis and secondary anemia) the blood-flow in the hand is smaller than the normal flow. Accepting Plesch's result, that the minute volume of the heart is increased in the anemias, the diminution in the hand flow is interpreted as a sign of a vasoconstriction in peripheral parts, which facilitates the increased flow through the lungs. The deficiency in the hand flow is less in the chlorotic group than in the other cases of anemia. The explanation suggested is that the increased total volume of the blood in chlorosis permits the normal amount of hemoglobin to circulate through the lungs without a marked increase in the peripheral vasoconstriction. The view that the diminution in the cutaneous blood-flow in anemia is a necessary compensatory arrangement for increasing the flow through the lungs affords a natural explanation of the beneficial effect in many cutaneous disorders of general measures, especially those aimed at improving the quality of the blood. In a case of bradycardia with a pulse rate permanently below 40 during rest in a sitting position, the hand flow was normal.

28. **Intestinal Obstruction.**—Hartwell claims that the length of life is in inverse ratio to the damage occurring in the intestine. All the animals in his experiments were under practically identical conditions as far as the stagnation of the intestinal contents is concerned, and if the poison arose from this source, or from functional changes in the mucosa, he claims they should have lived approximately the same time. A simple explanation is offered for the varying damage to the intestine. When antiperistalsis is sufficient to empty the intestine toward the stomach, no damage results. When this is absent the accumulated secretions distend the bowel until the circulation is obstructed and the damage results. The administration of saline subcutaneously exerts no influence either on the production of the poison under this condition, its absorption, or its elimination, and the dogs sicken and die in spite of this treatment. He cites examples to show that in the absence of damage to the intestine no symptoms of poisoning arise, provided the water lost by vomiting is replaced, and in the presence of such damage no amount of saline will, to an appreciable extent, affect the development of poisoning, or prevent death.

To Hartwell the conclusion seems inevitable that the only poison present in intestinal obstruction arises from the damage secondary to the obstruction, and not from the stagnation of intestinal contents or an altered function of a normally appearing mucosa. As final proof of his position, he reports that by exercising great care in avoiding damage to the intestinal wall, it is possible to keep dogs with the closed loop alive for comparatively long periods. He sounds a note of warning, viz., that the application of these facts to intestinal obstruction in man must be made with reserve. The human intestine is apparently incapable of withstanding the same amount of distention without damage, and consequently a poisoned condition occurs earlier in man. However, there are two important results of this experimental work. The need of large amounts of saline subcutaneously is proved, and has been used by Hartwell with advantage, patients having readily absorbed three to six quarts in twenty-four hours. He says there is no necessity of draining out the intestinal contents unless the bowel is damaged. Simple stagnation does not yield a poisonous substance, and consequently the release of the obstruction by operation is sufficient. When, however, strangulation has begup, the material above the obstruction should be removed, and if extensive damage exists a continued drainage through an enterostomy may be needed.

30. **Visceral Organisms.**—Since June, 1912, Carrel has been working to develop a technic by means of which a system of organs could be made to live and functionate when separated from the other organs. The present method consists in removing aseptically the abdominal and thoracic organs of an animal and in preserving the organs in an incubator at a temperature of 38 C., while the lungs are being artificially ventilated. The thorax and abdominal viscera, united by their blood-vessels, were removed from the cadaver of the animal and placed in a tray containing Ringer's solution at a temperature of about 38 C., in such a manner that the lungs floated on the surface of the fluid and the heart was suspended underneath in the liquid. When this position was reversed and the heart was placed above the lungs the circulation was somewhat impaired. The temperature of the Ringer's solution was maintained constant by means of an electric pad placed under the tray, or simply by the addition from time to time of Ringer solution at the right temperature. Ordinarily the heart still pulsated slowly and regularly, but the blood-pressure was low and the appearance of the organs anemic.

After a few minutes the blood-pressure began to rise, and in a few cases became almost normal. Generally it remained low and sometimes the heart entirely ceased beating. Then a transfusion was made from the carotid artery of the first animal to the inferior vena cava or abdominal aorta of the visceral organism. When the pressure was very low or when the pulsations of the heart had completely stopped, the transfusion was made directly through the aorta, in order to reestablish immediately a normal circulation through the coronary arteries. The heart started almost immediately to pulsate normally. As the condition of the heart improved the

transfusion was made through the inferior vena cava. It was possible in that way to inject quickly a large quantity of blood into the visceral organism. Immediately after the transfusion the lungs became pink, the heart beat strongly from 120 to 150 times a minute, and the blood-pressure often rose above normal. The abdominal aorta pulsated violently and strong pulsations could be seen in the arteries of the stomach, liver, kidney, intestine and even of the ovaries. Peristaltic contractions of the stomach and of the intestines were observed. The spleen, which was bluish, assumed its normal appearance. After a few minutes all the viscera were apparently normal.

Then a careful hemostasis of the posterior branches of the thoracic aorta was made and all the forceps were removed. It was important to ascertain that no hemorrhage, even one from a very small vessel, was taking place. If a few minutes after the transfusion the pressure was still above normal, a certain quantity of blood was allowed to flow from the lower part of the abdominal aorta. Then the appearance of the viscera exactly resembled that of a normal animal. The visceral organism was placed in a tin box filled with Ringer solution, and covered with Japanese silk and protected by a glass cover. The tracheal and esophageal tubes were fastened to proper openings in the anterior part of the box. The intestine was pulled through a glass and rubber tube fixed in the posterior wall of the box. The end of the intestine was fixed by circular suture to the edge of the rubber tube, an artificial anus being made. The box was put into an incubator at a constant temperature of about 38 C. Artificial respiration was carried on by a current of air interrupted about twelve times a minute. The compressed air was furnished by means of an automatic electric apparatus pumping air into a tank, from which it was given to the animal under the proper pressure. Water or food could be injected into the stomach through the esophageal tube. The urine could be collected from the bladder through a tube, but it was generally aspirated from the bladder with a needle, when samples of urine were taken for study. The feces and intestinal secretions were received outside of the box from the artificial anus.

It was then observed that during the hours following the operation the viscera had the same appearance as those of a living animal. The contractions of the heart and the circulation of the organs were apparently normal. Pulsations could be seen in the smaller branches of the mesenteric artery. The intestine emptied itself through the artificial anus by means of regular peristaltic contractions. When the intestine was empty, bile and intestinal juices were evacuated. In an experiment in which the stomach was full of meat at the time of death, digestion took place. At least 90 per cent. of the amino-acids injected into the intestine were rapidly absorbed. There was also an abundant secretion of urine, which was collected into the bladder. After five or six hours hyperemia of the peritoneum of the intestine appeared. It seemed as though a peritonitis developed progressively, and in some cases the intestines became paralyzed after eight or nine hours, although their circulation was still very active. Abundant hemorrhage could still be produced by section of a small branch of the mesenteric artery.

Some of the visceral organisms died almost suddenly after three or four hours, but most of them were in a normal condition ten and even twelve hours after the death of the animal to which the organs belonged. The death of the organism was announced by some irregularities in the pulsation of the heart, which was also weaker. Then the heart stopped suddenly. In one experiment the death of the visceral organism occurred thirteen and one quarter hours after the death of the cat from which it was taken.

34. **Rate of Absorption of Epinephrin.**—Kleiner and Meltzer found that subcutaneous injections of epinephrin are, in contrast with its behavior in the production of the other effects of that drug, more favorable to the production of glycosuria in rabbits than intramuscular injections; the failures are fewer and the quantities of dextrose in the urine are generally larger. In general, as regards the stimulation of diuresis by epinephrin, a subcutaneous injection exerts generally a greater effect than an intramuscular one. Subcutaneous injections of a certain dose of epinephrin distributed over several areas are far less effective than the administration of that dose in a single injection; they fail frequently to produce any glycosuria, the quantity of dextrose in the urine, when present, being less, and the quantity of urine being generally diminished. Apparently, the more slowly the injected epinephrin reaches the blood, the greater is its effect in producing glycosuria and generally, also, the greater its diuretic action.

Journal of Ophthalmology and Oto-Laryngology, Chicago

July, VII, No. 7, pp. 205-238

36 Auto-Intoxication in Relation to Eye. H. L. Hiltgartner, Austin, Texas.
37 Attenuated Types of Suppurative Sphenoiditis in Relation to So-Called Postnasal Catarrh, to Headache with Mental Daze and to Asthma. W. E. Casselberry, Chicago.

Kentucky Medical Journal, Bowling Green

August 1, XI, No. 15, pp. 633-688

38 Heredity: Its Influence on Progeny. J. T. Dixon, Owensboro.
39 Prevention by Vaccination. A. A. Schultz, Owensboro.
40 Malpositions of Abdominal Viscera in Intestinal Stasis. D. Y. Keith, Louisville.
41 Summer Diarrhea. J. A. Kirk, Philpot.
42 Ascites. C. V. Hiestand, Merrimac.
43 Anthrax and Its Treatment. W. A. Ligon, Louisville.
44 Sanitation. C. Pope, Louisville.
45 Medical Witness. J. Breathitt, Hopkinsville.
46 Septic Infections. S. M. Hopkins, Gardnersville.
47 Causes and Treatment of Summer Diarrhea. B. C. C. Turner, Lucas.
48 County Medical Society. U. L. Taylor, Columbia.
49 Tuberculosis. F. S. Tripp, Harrodsburg.
50 Physician Himself: Some Things He Is Blamed for and Some Things He Does. E. L. Gowdy, Campbellsville.
51 Case of Cerebrospinal Meningitis. A. O. Taylor, Maysville.
52 Menopause. T. L. Lamkin, Bardwell.
53 Exophthalmic Goiter. J. R. Wathen, Louisville.
54 Anterior Poliomyelitis. B. J. Bolin, Glensfork.
55 Urethral Strictures and Treatment. J. T. Windell, Louisville.
56 Surgical Treatment of Biliary Calculi. L. Frank, Louisville.
57 Capillary Bronchitis. J. G. Moss, Hartranft, Tenn.

Medical Record, New York

August 9, LXXXIV, No. 6, pp. 231-276

58 Problem of the Social Evil Considered in Its Social and Medical Aspects and in Its Relation to the Problem of Race Betterment. J. E. Mears, Philadelphia.
59 Infant Mortality. M. S. Reuben, New York.
60 Diagnosis of Gonorrheal Stomatitis. J. B. Stein, New York.
61 Indian Hospitals. C. B. Meding, New York.
62 Neosalvarsan. T. S. Van Riempst, New York.
63 Indicanuria, the Feces and the Sulphates of the Urine. J. C. Warbrick, Chicago.
64 Tuberculosis in the U. S. Navy. I. W. Brewer, Taughannock Fall, N. Y.
64 *Pneumonia, Immediate and Contributing Cause of Death; Rational Treatment. W. C. K. Berlin, Denver.

August 16, LXXXIV, No. 7, pp. 277-322

65 Surgery of the Revolutionary War. T. Abbe, Washington, D. C.
66 Wassermann Reaction in Cancer. F. J. Fox, New York.
67 Specifics in the Treatment of Tuberculosis. G. R. Pogue, Greeley, Colo.
68 Blunders Made by Nature. A. Maverick, San Antonio, Texas.
69 Dream Interpretation. J. W. Brandeis, New York.
70 Case of Broncholith, Bronchial Calculus or Lung Stone. W. F. Chappell, New York.
71 Positive Wassermann Reaction in Apparently Non-Syphilitic Cases. A. Newlin, Philadelphia.
72 Treatment and Pathology of Appendicitis. B. S. Purse, Savannah.
73 "Blackwater Fever." G. Richter, St. Louis.

64. **Treatment of Pneumonia.**—To an isotonic saline solution given intravenously Berlin has added iodin solution, to which were also added creosote and guaiacol for their anesthetic and germicidal action. The creosote acts strongly as a sedative to pain, relieves congestion, and greatly relieves dyspnea, making the patient more comfortable immediately. Although the number of patients so treated during the past two years has been too small to be conclusive, he says, that every patient has recovered in spite of the fact that several had been given an absolutely bad prognosis by competent consultants.

Michigan State Medical Society Journal, Grand Rapids

August, XII, No. 8, pp. 493-532

74 *Nature and Treatment of Bronchial Asthma. R. H. Babcock, Chicago.
75 School Hygiene or Health and Progress of School Child. F. Allport, Chicago.
76 Skin-Grafting. W. R. Parker, Detroit.
77 Ocular Manifestations of Disease of Hypophysis. G. M. Waldeck, Detroit.
78 Psychiatric Aspects of Sterilization Law. C. W. Mack, Pontiac.
79 Angina Pectoris; Case Report. E. Boise, Grand Rapids.

74. See THE JOURNAL, Aug. 2, Abstract No. 57, p. 365.

Military Surgeon, Washington, D. C.

July, XXXIII, No. 1, pp. 1-99

80 Campaign of Fredericksburg, December, 1862. L. C. Duncan, U. S. Army.
81 Cerebrospinal Meningitis: Report of Sixteen Cases Observed at Jefferson Barracks, Mo., 1911 to 1913. H. P. Pillsbury, U. S. Army.
82 Varioloid in Manila. P. M. Ashburn, E. B. Vedder and E. R. Gentry, U. S. Army.

New York Medical Journal

August 9, XCVIII, No. 6, pp. 257-304

83 *Dysentery in the Tropics. E. R. Whitmore, New York.
84 Acute Infectious Jaundice in Children. C. Herman, New York.
85 Retrocalcaneal Bursitis. C. S. White, Washington, D. C.
86 Combined Cystoscope and Evacuator. E. MacD. Stanton, Schenectady.
87 Surgical Cure of Leprosy. E. S. Goodhue, Hawaii.
88 *Use of Very Minute Initial Dose in Tuberculin Therapy. M. Solis-Cohen, Philadelphia.
89 Acute Dilatation of the Stomach Complicating Pneumonia. E. H. Goodman, Philadelphia.
90 Chronic Intestinal Stasis. L. M. Kahn, New York.
91 Polycythemia: Report of a Case in an Insane Patient. R. M. Alexander, Wernersville, Pa.
92 Unilateral Septic Infection of the Kidney. A. P. Condon, Omaha, Neb.

August 16, XCVIII, No. 7, pp. 305-352

93 Prevention of Deafness. G. Hudson-Makuen, Philadelphia.
94 Importance of Serologic Analyses in Neurology. D. M. Kaplan, New York.
95 Safety Pin Removed from Larynx of Child by Direct Laryngoscopy. H. Smith, New York.
96 Etiology and Treatment of Hypertrichosis. P. E. Becht, New York.
97 Secretin as a Remedy in Gastro-Intestinal Disorders. H. R. Harrower, London, England.
98 Importance of Early Operation for the Radical Cure of Hernia. H. W. Austin, New York.
99 *Use of Phosphorus in Diseases of the Lungs. F. Lemon, Melbourne, Australia.
100 The Response of Veins to Epinephrin. A. C. Crawford and M. M. Twombly, Leland Stanford, Cal.
101 So-Called Latent Syphilitics or Paretics and Tabetics: A Water Suggestion. J. C. Minor, Hot Springs, Ark.
102 Typhoid from Uncooked Vegetables. C. Pixley, Missoula, Mont.

83. **Dysentery in the Tropics.**—Amebic dysentery, according to Whitmore, is endemic and does not ordinarily give rise to epidemics; bacillary dysentery gives rise to extensive epidemics. Amebic dysentery is due to a protozoon; bacillary dysentery is due to a bacillus. In amebic dysentery the process begins in the submucosa, from the specific tissue destroying property of the amebae which have traveled in through the mucosa; bacillary dysentery is a diphtheritic or croupous process, involving the intestinal mucosa, and the submucosa is only secondarily involved. Liver abscess is a frequent complication in amebic dysentery; it is very rare in bacillary dysentery. Amebic dysentery tends to become chronic, with amebic relapses; bacillary dysentery is a self-limited disease, with a tendency to complete recovery. Ipecac, in the form of emetine, is specific in amebic dysentery; a specific antitoxic and bactericidal serum gives the best results in the treatment of bacillary dysentery.

88. **Use of a Very Minute Dose of Tuberculin.**—With the exception of the method of White and Van Norman, Cohen says, there is no way of ascertaining beforehand the proper therapeutic dose of tuberculin for the individual patient, or the amount that will produce a reaction in that patient. Only by beginning tuberculin treatment with a dose smaller, or at least no larger, than the one that will benefit the patient, or produce a reaction, can one obtain the good effects and avoid the harmful action of this dangerous agent. In giving tuberculin, aim to begin with less than the amount required. In other words, give a safe dose. An initial dose larger than 0.000001 milligramme will probably produce a reaction of greater or less severity in the majority of tuberculous subjects. It can be given, therefore, only to a limited number of selected patients. The number of tuberculous patients who will exhibit a severe reaction to 0.0000001 milligramme of tuberculin is probably small. Hence, this is a safe dose for the average sufferer from tuberculosis, with the exception of advanced, toxic patients. As tuberculosis is usually a chronic disease, and its treatment prolonged, there can be no serious objection to taking a little time to determine the proper dose of tuberculin for the individual patient, especially if by so doing we avoid harming him. There is no immediate hurry. The proper method of giving tuberculin, therefore, would be to begin with 0.000000.1 milligramme, or 0.00000001 milligramme, and if this dose should be found to be too small, to gradually increase it until the proper dose is reached. With this method Cohen states, tuberculin therapy will be rooted of its greatest danger, and many more patients will be able to take tuberculin than are now considered suitable for the excessive doses in general use at the present day.

99. **Use of Phosphorus in Diseases of the Lungs.**—Phosphorus in doses of 1/1000 of a grain has been successfully administered by Lemon in all classes of cases of lung disease during the past eleven years, and though, in the majority of cases it has been used in combination with other drugs, occasionally necessity compelled the use of it alone, and the success which has attended all cases where it has been used Lemon ascribes largely, if not altogether, to its presence in the mixture.

Oklahoma State Medical Association Journal, Muskogee

August, VI, No. 3, pp. 103-138

103 Milk as Food for Infants. J. T. Martin, Oklahoma City.
104 Plea for Routine Examination of Blood for Malarial Parasite. L. A. Mitchell, Frederick.
105 Defects within Lower Spinal Canal. H. Reed, Oklahoma City.
106 Importance of Pain and Shock in Operative Mortality. L. F. Watson, Oklahoma City.
107 Arteriosclerosis. W. G. Little, Okmulgee.

Southern Medical Journal, Nashville, Tenn.

August, VI, No. 8, pp. 493-560

108 Improved Technic and Equipment for Wassermann Test. W. Krauss, Memphis, Tenn.
109 Uncinariasis a National Problem. W. W. Dinsmore, Montgomery, Ala.
110 Some Practical Phases of Typhoid Problem. P. B. Moss, Montgomery, Ala.
111 Rectal Inoculation of Kittens as Aid in Determining Identity of Pathogenic Entamebae. S. T. Darling, Ancon, Canal Zone.
112 Schools for Feeble-Minded State's Best Insurance Policy. I. M. Hardy, Kinston, N. C.
113 Production of Beriberiform Polyneuritis in Fowls with Substances Other than Rice. C. Wellman, New Orleans.
114 Some Problems in Infant Nutrition. C. A. Rhodes, Atlanta, Ga.
115 Extra-Uterine Pregnancy. J. H. Carter, Memphis, Tenn.
116 Operations for Glaucoma; Iridotasis. D. Roy, Atlanta, Ga.
117 Tamponade Treatment of Accessory Sinuses and Its Effect on Intra-Ocular Inflammation. W. S. Manning, Jacksonville, Fla.
118 Gangrenous Tonsil. U. S. Bird, Tampa, Fla.
119 Retrospect of Five Hundred and Ten Obstetric Cases. J. F. Cranmer, Wilmington, N. C.
120 Unequal Presbyopia. A. W. Stirling, Atlanta, Ga.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Clinical Journal, London

July 16, XLII, No. 15, pp. 225-240

1 Value of Pain as Symptom of Renal Disease. J. S. Joly.
2 Some Acute Abdominal Perils. J. W. Leech.

July 23, No. 16, pp. 241-256

3 Ectopia Testis. W. M. Eccles.
4 Enlargement of Spleen. F. Taylor.
5 Diagnosis and Treatment of Lacrimal Affections. S. *Stephenson.
6 Gout, Rheumatism and Rheumatoid Arthritis. T. M. Allison.

Medical Press and Circular, London

July 16, XCVI, No. 3871, pp. 53-78

7 Treatment of Glaucoma with Particular Reference to Newer Operations. S. Stephenson.
8 Duodenal Ulcer. X. Combes.
9 Hematemesis as Cause of Death. D. E. Core.
10 Intravenous Administration of Neosalvarsan in Syphilis. J. A. Nixon.

July 23, No. 3872, pp. 79-106

11 Reflexes and Their Significance. F. S. Palmer.
12 Medical Treatment of Phlebitis. H. Vaquez.
13 Apex Treatment for Pulmonary Consumption. W. Ewart.
14 Leukocyte Count in Gas and Ethyl-Chlorid Anesthesia. W. Guy, A. Goodall and H. S. Reid.
15 Treatment of Infantile Paralysis. P. B. Roth.

Quarterly Journal of Medicine, London

July, VI, No. 24, pp. 435-540

16 *Auricular Fibrillation. A. M. Gossage and J. A. B. Hicks.
17 Illustrations of Heart-Sound Records. T. Lewis.
18 *Incidence and Prognostic Value of Pulsus Alternans in Myocardial and Arterial Disease. J. D. Windle.
19 Cysticercus Cellulosae in Central Nervous System: with Account of Two Cases. R. Waterhouse.
20 *Pneumothorax Treatment of Tuberculosis of Lungs. O. Amrein and F. Lichtenhahn.
21 Localization of Function in Kidney. W. P. Herringham and J. W. Trevan.
22 *"Specific" Use of Salicylate in Acute Rheumatism: Consideration of Practical Objections. R. Miller.

16. **Auricular Fibrillation.**—The authors point out that while the exact cause of auricular fibrillation is unknown, it usually comes on in a heart in which there has been for a considerable period disease of the valves or myocardial change from inflammation or degeneration. Sometimes it arises suddenly where there has been no previous sign or symptom of heart disease. The authors suggest that possibly in some of these cases it occurs in hearts which were previously perfectly healthy. If this is true its essential cause must lie outside the heart and not in any anatomic or pathologic change in the heart itself. Sudden death in auricular fibrillation is probably due to the onset of fibrillation of the ventricles, and that some cases of sudden death both in diseased and healthy persons may be due to the simultaneous onset of fibrillation of both auricles and ventricles.

18. **Pulsus Alternans in Myocardial and Arterial Disease.**—Windle has had forty-five patients under observation, showing the pulsus alternans in the following conditions, stated in order of frequency: 1. Arterial and myocardial disease. 2. Chronic heart disease due to rheumatism. 3. Pneumonia. 4. Paroxysmal tachycardia. 5. Acute rheumatic carditis. It is Windle's experience that the presence of the pulsus alternans in a case of myocardial and arterial disease always adds to the gravity of the prognosis. It signifies disease of the heart progressing inevitably to a fatal end; and this is its meaning when present, as it not seldom is for a time, in patients whose clinical condition does not suggest serious unsoundness of the heart. In the case of thirty-three patients with myocardial and arterial disease under his observation, the diagnosis of the pulsus alternans was established in each case by polygraph tracings; and records were taken systematically during the time the patients were under notice. Five of these patients died within a year; two lived eighteen months, and two twenty-four months after the pulsus alternans first showed itself. Windle says that when once the pulsus alternans appears in a patient the subject of arterial disease it will never again be absent for long. The reason for its permanence in these cases is that the exhaustion of the heart which it expresses is due to degeneration of the heart muscle. In the early stages alternation becomes latent for a time through bodily rest, or the action of drugs which slow the heart, but eventually persists with rest and in spite of any measures of treatment yet tried.

20. **Pneumothorax Treatment of Tuberculosis.**—The authors report eleven cases of pulmonary tuberculosis in which they produced an artificial pneumothorax by means of nitrogen. Their results in summary are as follows: Case 1. Mainly unilateral tuberculosis of the lungs. Prognosis unfavorable. In consequence of the artificial pneumothorax a further development of the disease was averted and the toxic influence of the large infiltration of the right middle and lower lobe was eliminated, as shown by the disappearance of the fever. A complete cure was impossible on account of the large cavity, but this had become smaller by a half during the year of the duration of the pneumothorax. It was, however, impossible to eliminate the influence of the intoxication of the whole organism, after some years of illness, and entirely to check the secretion of the cavity. The fatal issue was entirely due to the amyloid degeneration of the kidneys, which had been diseased for sixteen years. The condition of the compressed lung, as shown at the autopsy, was absolutely satisfactory, from the point of view of the success of an artificial pneumothorax. Case 2. Monolateral tuberculosis of the whole left lung, with tendency to hemoptysis, which indicated the necessity of an artificial pneumothorax. In this case the hemoptysis was entirely checked. There was a general amelioration and capacity to resume work. Seven months afterward, when all the nitrogen was absorbed, a relapse (entirely due to his own carelessness) occurred, rendering the prognosis extremely doubtful. In future, the authors state that they will, with similar cases, go on with the punctures for a long time, if only to keep such a patient under medical control. The success in this particular instance can be claimed as definite, and the hemoptysis was completely checked.

Case 3. Advanced monolateral phthisis with large apical cavity. The operation produced a compression, and the expectoration was greatly and definitely reduced. Contrary to their expectations, it was impossible to produce a partial pneumothorax in a case which *a priori* did not seem to be a favorable one for this form of treatment. Case 4. In this case of advanced monolateral tuberculosis, evidencing activity and deterioration, the operation of pneumothorax produced a wonderful effect. In a short time all symptoms of deterioration and toxity were completely arrested. Case 5. Advanced monolateral tuberculosis of the right lung, with pyrexia. After operation, disappearance of fever, decrease of cough and expectoration. A durable result is probable, although the patient is not sufficiently careful, thereby undergoing considerable risk. Case 6. Advanced tuberculosis of the entire left lung with a hopeless prognosis; high hectic fever for three years, abundant expectoration; a picture of general deterioration and daily loss of ground. But, after the compression of the lung, there was instant cessation of the fever, with decrease of sputum to one-fifth of its quantity. Five months only have lapsed since the production of the pneumothorax, and a very considerable time must pass before a definite healing takes place, but the authors are justified in hoping that this healing will be effected, if the organism, which for so long a time was weakened and intoxicated, has sufficient power of resistance to conquer the alteration of the circulation. In any case, this patient's life has been for the moment saved by the production of an artificial pneumothorax.

The remaining five cases were not so definitely successful. Personal experience with the pneumothorax treatment convinces the authors that many apparently hopeless cases of monolateral tuberculosis of the lungs can be arrested, and, further, may be healed, and even if perfectly satisfactory results are few and far between, the trial of the treatment is legitimate.

22. **Salicylate in Acute Rheumatism.**—The objection that the larger doses of salicylate do not imply increased absorption of the drug is held by Miller to be without foundation. The objection that the larger doses are too prone to produce vomiting to be of value, he says, is only partially true. The production of vomiting is more a matter of the type of case under treatment and the methods of administration than the size of the dose employed. The vomiting produced in severe cardiac cases must necessarily be a limitation to any antirheumatic action which the drug may possess in rheumatic carditis. The objection that large doses are too prone to produce acid intoxication to be of value is also only partially true. The method of administration is of more importance than the size of the dose. The objection that the larger doses are dangerous and tend to increase fatalities, Miller states,

is not supported by the series of cases examined. It is again a question of knowing how and when to use the drug. The objection that the specific use of salicylate is unsound, as relapses, particularly of nodules, are not prevented, is not well supported by the series of cases examined. Most of the relapses occurred on or after small doses or a short period of administration of the drug; cases taking large doses showing some immunity to relapses. Nodules are not generally more commonly found in relapses than are other manifestations; and where they develop under large doses it seems that they signify little, if any, fresh activity on the part of the infection.

Annales de Gynécologie et d'Obstétrique, Paris

July, XL, No. 7, pp. 385-448

23 *Diffuse Edema of the Fetus. C. Sauvage.
24 Dissecting Mole. Curtis and Oui. Commenced in No. 6. See Abstract 63, p. 439.

23. **Diffuse Edema of the Fetus.**—Sauvage has recently encountered two cases and discusses the factors engaged in the production of the fetal edema. In some cases malformation of viscera or abnormal composition of the blood is evidently responsible, both a mechanical cause and a toxic cause being possible. When the placenta is likewise edematous, a toxic origin is more probable, although the edema may back up into the placenta; Fischer has recently reported a case in which the edema in the fetus was undoubtedly due to mechanical causes but the cord was very short and the placenta was also edematous, weighing 500 gm. In one of the personal cases reported Sauvage found that the proportion of sodium chlorid in the blood was much above normal and it was still higher in the edema fluid than in the blood-serum. These facts are significant as they suggest that an excess of sodium chlorid or retention of sodium chlorid in the mother may have been responsible for the diffuse edema in the fetus. The excessive proportion of sodium chlorid in the fetal fluids was accompanied by serious lesions in the liver, kidneys and spleen. The mother's kidneys were not functioning properly, the insufficiency of the kidneys being manifested by edema during the pregnancy and by tests repeated three weeks after delivery. She was a woman of 44 with no morbid antecedents except edema and lassitude during her three previous pregnancies, two of them terminating by the death of the fetus. There is evidently chronic nephritis but it persists latent except when the kidney functioning is hampered by a pregnancy. There were no signs of syphilis in either case. Pronvost three years ago warned of the expediency of reducing the intake of salt during pregnancy.

Archives Générales de Médecine, Paris

July, XCII, No. 7, pp. 581-672

25 Direct Intratracheal Medication Through Extremely Narrow Tracheotomy Cannula Leaving Natural Passage Still Open. (La trachéo-fistulisation, traitement méthodique des infections broncho-pulmonaires, graves, fétides et tuberculeuses; avec quelques remarques sur l'alimentation et la suralimentation pulmonaires.) G. Rosenthal.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

July, II, No. 7, pp. 1-47

26 Surgical Anatomy of Pelvic Ureter. E. Papin and R. de B. Lagarde.
27 Injury of Ureter During Abdominal Hysterectomy and Its Treatment. R. de B. Lagarde.

Journal de Chirurgie, Paris

July, XI, No. 1, pp. 1-140

28 *Spontaneous Hemorrhage in Vicinity of Kidney. (L'hématome périrénal spontané.) A. Lippens.
29 Outward Dislocation of the Clavicle. F. M. Cadenat.

28. **Spontaneous Perirenal Hematoma.**—Lippens summarizes twenty-three cases from the literature and remarks that the symptoms closely resemble those of a ruptured tubal pregnancy. It has never been accurately diagnosed before the operation; left to itself it is always fatal. The seven patients not given operative treatment all died. Even at the best, the outlook is serious as 25 per cent. of the patients operated on succumbed. In ten cases the hematoma was merely opened and the pocket tamponed; four of these patients died. In six cases the kidney had been injured so much by the compression that it was at once removed, with recovery of five of the six patients. If the blood pours out copiously and persistently or if the kidney has been irreparably damaged, nephrectomy is indispensable. As the diagnosis is generally so uncertain, Lippens advises a transverse incision or Verhoogen's paraperitoneal incision.

Journal de Médecine de Bordeaux

July 20, LXXXIV, No. 29, pp. 463-474

30 Pathogenesis and Classification of Insidious Tuberculous Congestions at the Base of the Lungs. (Les basites tuberculeuses.) H. Vennat and P. Lafargue.
31 *Treatment of Epilepsy. Pitres.

31. **Treatment of Epilepsy.**—Pitres remarks that the consensus of opinion is now that the seizures of epilepsy are brought on by some perversion in the metabolism of proteins, and consequently the diet should be regulated with this in view, keeping the unstable gastro-intestinal tract under constant supervision. De Fleury even forbids the use of milk and keeps his patients on a strictly vegetable diet, with as little salt as possible. Pitres adds that ligation of the carotids has two successful cases to its credit, and two out of six cases have been reported as successes following ligation of the superior longitudinal sinus. Operations on the sympathetic nerve and lumbar puncture have invariably failed to relieve, as also decompressive cranial operations in essential epilepsy. Regarding the seizures as due to a toxemia, elimination of the toxins should be promoted in every way, especially by venesection, withdrawing from 300 to 500 gm. of blood, following with infusion of 250 or 500 c.c. of saline, and flushing the intestines copiously with cold boiled water, giving the patient bromid in milk or in the saline infusion. Here lumbar puncture may render valuable symptomatic services, with cold baths if the temperature runs up. Symptomatic epilepsy subsides after removal of the cause, possibly by correction of a visual defect or removal of adenoids. Treatment as for syphilis may prove unexpectedly successful. Traction, compression or a ring of blisters above the part involved in jacksonian epilepsy may also cure the tendency to spasm. He has witnessed a complete cure follow the application of ten or fifteen blisters in turn one above the other.

Lyon Médical, Lyons

July 20, CXXI, No. 29, pp. 97-140

32 Negative Value of Salvarsan Treatment for Tuberculosis. P. Courmont and Durand.

July 27, No. 30, pp. 141-180

33 Fatal Embolism of Anterior Coronary Artery; Fourth Case on Record. L. Gallavardin and P. Dufourt.

Presse Médicale, Paris

July 16, XXI, No. 58, pp. 585-592

34 The Gases in the Blood. G. Weiss.
35 *Misleading Findings in Radioscopy of the Stomach. (De l'évacuation gastrique.) A. Martinet and L. Meunier.

July 19, No. 59, pp. 593-604

36 *Biochemical Aspects of Alcohol Intoxication. M. Nicloux.
37 Primary Acute Orchitis in Children. L. Ombrédanne.

July 23, No. 60, pp. 605-612

38 Classification of Glands with an Internal Secretion according to the Function of their Products. E. Gley.
39 Vaccine Therapy of Whooping-Cough. (Vaccinothérapie anticoquelucheuse.) L. Lagane.
40 Difference in Radial Pulse in Syphilitic Aortitis. L. Lavastine and Vinhit.

July 26, No. 61, pp. 613-624

41 Hypophysis Extract as a Purgative. (Emploi de la médication hypophysaire comme agent entérocinétique.) B. A. Houssay and J. Berutt.
42 Salvarsan in Syphilis. (Comment peut-on et doit-on employer le salvarsan.) L. Brocq.

35. **Radioscopy of the Stomach.**—Martinet and Meunier state that the bismuth gruel which the patients are given for radioscopy is a most unappetizing mess, generally choked down by the patient with repugnance, and it does not elicit

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the normal responses in the stomach. Consequently the findings on radioscopy are not those of the physiologic functioning of the stomach but represent conditions quite different from those that follow an ordinary meal eaten with appetite. Consequently they declare that the findings are no criterion of the actual functional condition of the stomach. They suggest that the patient should take an ordinary test meal, made appetizing, and the bismuth suspension should be taken after a given interval; this would surprise the stomach at its normal work and the findings then would be truly instructive.

36. **Biochemical Aspect of Alcohol Intoxication.**—Nicloux describes a method with which he has been able to detect minute amounts of alcohol in the blood and other fluids and tissues of the body and of the fetus, and reports his findings therewith. He distils out the alcohol after mixing the substance to be examined with picric acid, and estimates the proportion present by the bichromate-sulphuric acid method. Among the practical results of his research are the constant findings that alcohol ingested passes directly into the genital glands and secretions in considerable proportions. The alcohol seems to pass with exceptional facility into the testicles and into the fetal blood. When the male organism is under the influence of alcohol it passes into the testicles, prostate and the semen, the toxic action of the alcohol thus being liable to be directly exerted on the ovum when fecundation occurs under the influence of alcohol. On the other hand, alcohol taken by a pregnant woman at any time during her pregnancy is liable to pass directly into the blood of the fetus, the tests showing very little difference between the alcohol content of the maternal and the fetal blood. Outside of pregnancy, the alcohol passes to the ovary and into its secretion. Alcohol passes rapidly out of the system, in twenty-four hours at most. But during this period, if fecundation occurs, it is while the genital glands and genital secretions are feeling the noxious influence of the alcohol poisoning the spring of life at its source.

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Revue de Médecine, Paris

July, XXXIII, No. 7, pp. 521-600

43 *Pathogenesis of Epilepsy. A. Pierret.
44 Infectious Erythemas Occurring during Measles. E. Weill and C. Gardère.
45 Anaphylaxis by a Pulmonary Fungus. (Mycoderma pulmonum. Sensibilisation de l'organisme par un champignon du poumon.) L. Jannin.

43. **Pathogenesis of Epilepsy.**—Pierret found by animal experimentation that epilepsy can be produced by various sorts of traumatism of the nervous system. He believes that in many, perhaps all, cases of so-called idiopathic epilepsy the patients have had some infectious disease localized in the nervous system, leaving behind it cicatricial areas. Later some intoxication takes place and toxic products, acting on these sclerotic foci, cause convulsions, which may be motor, sensory or psychic. The rational treatment therefore is to protect the patient from all possible causes of intoxication from within or without.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

July, XXI, No. 7, pp. 193-220

46 Palliative Vaginal Hysterectomy for Cancer of the Cervix with Recurrence after Ten Years. A. Charrier and A. Parcellier.

Archiv für klinische Chirurgie, Berlin

CI, No. 4, pp. 845-1125. Last indexed July 26, p. 311

47 *The Epidural Space. B. Heile.
48 Experiences at the Seat of War. (Kriegschirurgische Erfahrungen auf der Tripolis-Expedition des Deutschen Rothen Kreuzes.) C. Goebel.
49 The Work of the Pointed Bullet. (Wirkung des Spitzgeschosses.) F. Colmers.
50 Fascia Flap for Prevention of Postoperative Hernia and Protrusion. G. A. Waljaschko and A. A. Lebedew.
51 Experimental Research on Infection of the Thoracic Cavity. H. Burckhardt.
52 *Spontaneous Healing of Wounds in Lungs. M. Tiegel.
53 Surgery of Large Intestine, Rectum Excepted; Thirty-One Cases. (Zur Chirurgie des Dickdarms, ausser dem Mastdarm.) B. K. Finkelstein.
54 Autoplastic Flap of Fat in Treatment of Defects in Dura and Brain; Experimental Research and One Successful Clinical Case. (Autoplastische Fetttransplantationen bei Dura- und Hirndefecten.) E. Rehn.
55 Dysphagia and Dyspnea from Malformation of Organs; Two Operative Cases. C. Girard.
56 *Ultimate Outcome of Arthrodesis for Paralyzed Ankle. (Endresultate der Lexer'schen Arthrodese am Sprunggelenk.) M. Schewandin.
57 Stab and Firearm Wounds Involving Both Chest and Abdomen. (Ueber penetrirende Brustbauchverletzungen.) N. Gulcke.
58 Evil Effects of Chloroform in Laparotomies Done for Acute Inflammatory Processes. (Wahl des Narcoticums bei Operationen wegen acut entzündlicher Processe in der Bauchhöhle.) O. Sprengel.
59 Drainage of Hepatic Duct. (Transjejunale Hepaticusdrainage.) O. Nordmann.
60 Operative Treatment of Cortical Epilepsy; Traumatic and Non-Traumatic. W. J. Rasumowsky.
61 *Operations on Seminal Vesicles. (Operationen an den Samenblasen.) F. Voelcker.
62 *To Expel Blood in Operations on the Skull. (Ueber Verminderung des Blutgehaltes bei Schädeloperationen.) C. Ritter.

47. **The Epidural Space.**—Heile describes the technic with which it is possible to inject an anesthetic or other fluid into one side of the epidural space and thus act directly and exclusively on the nerves on that side. The best results with this as with all other methods of treatment of sciatica are obtained in the cases in which there is no inherited taint of the kind, the patients had been previously healthy and the nerve shows signs of irritation, namely, tenderness along the nerve, hyperesthesia of the skin, especially in the area of the fifth lumbar vertebra, Lasègue's sign, etc. With a history of preceding rheumatism or sciatica in the parents, the epidural injections may temporarily relieve but there are generally more or less irreparable lesions and a tendency to atrophy of the gluteal muscles and the muscles of the legs, and more or less changes in the reflexes. When he notes these signs of neuritis of the roots, he abandons hope of a permanent cure from the epidural injections. If the patient insists he injects merely 30 or 40 c.c. of a hypotonic salt solution to refrain from further irritating the nerve. The injection may even aggravate the pain in these cases; much better results are liable to be attained with weak galvanic electricity. On the other hand, in the first group of cases, especially when complicated by scoliosis of the lumbar vertebrae, suggested early by the lowness of the anal fold on the affected side, most excellent results followed the injection after the failure of months of other measures, internal and external. In these cases he injected as large amounts of the fluid as possible, from 80 to 150 c.c., injected through the sacral foramen or into the spine, aiming to loosen up the nerve itself, cause it to swell and thus promote the softening up and absorption of the products of inflammation. This swelling up of the nerve is a painful process, and this pain is the sign that the nerve itself has been reached. It may require ten such injections to complete the cure, and it is difficult to convince the patients of the advantages of submitting to repetitions of this painful procedure. Consequently the sphere of the method is limited. He has never witnessed any durable untoward by-effects from it in any instance. The epidural space cannot be depended on for reliably blocking the nerves for local anesthesia. The article is illustrated.

52. **Spontaneous Healing of Wounds in the Lungs.**—Tiegel reports the case of a man of 38 who had five ribs fractured by a falling beam and the lung ruptured. Emphysema developed over nearly the whole trunk and head. As the suffocation became threatening, Tiegel made an incision 4 cm. long in the neck, down to the trachea, and applied a vacuum cup connected with a water jet pump, with valve regulator. The negative pressure in the cup was kept at 30 cm. water. The result was immediate relief and in half an hour the patient was able to open his eyes, which before had been impossible from the emphysema of the lids. The aspiration stopped at one time but continued after the pressure had been temporarily increased, aspirating fluid along with the air. Recovery was prompt and smooth, the lung healing spontaneously in five days as was evident from the behavior of the interposed

valve. Tiegel thinks that the results in this case were better than could have been attained with any operation, no matter how extensive. He gives further illustrations of the lungs from six dogs showing the smooth spontaneous healing after extensive stab wounds. One lung showed the wound tightly stuck together forty hours after the injury, sustaining pressure up to 45 mm. mercury. These experiments not only illustrate the remarkable tendency to spontaneous repair and healing but also the spontaneous arrest of hemorrhage after such injuries of the lungs.

56. **Disappointing Outcome of Bone-Peg Arthrodesis.**—Schwandin was able to reexamine recently five patients who had been treated by Lexer's technic for paralysis of the ankle, driving a peg of bone into the joint. The peg was taken from the tibia or the fibula of the leg above, with its marrow and periosteum. Besides the five cases described in detail he has records of four other patients, all with an interval of from two to five years since the operation. Good results were obtained in only a very few instances; the bone was gradually absorbed and then conditions were no better than before the measure had been applied. None of the patients experienced any ill effects from the operation on the bone above, and only one of the patients had pain in the pegged ankle, but as the bone peg was absorbed, the joint grew loose again and the toes or the whole foot dragged.

61. **Operations on the Seminal Vesicles.**—In two of Voelcker's fourteen cases the operation on the seminal vesicles was done for a tuberculous process, once for myoma, once for carcinoma, this patient dying six months later from metastasis. In three other cases the trouble was an infectious catarrh of the bladder and kidney pelvis involving the seminal vesicles; in another case the inflammation in and around the seminal vesicles was the work of the gonococcus and the kidney pelvis was also involved. Marked improvement followed the operation although this patient is still under treatment for his pyelitis; the anticipated abscess in the vesicle region was not found and the trouble must have been merely acute inflammatory adhesions. A simple incision seemed to answer the purpose and the relief was so prompt and complete that Voelcker commends this little operation in such cases to ward off danger from obstruction to the outflow of urine from the kidney pelvis. Only he advises in this case to keep the wound open to drain for several weeks; the two weeks of drainage in his case were evidently not long enough. There was slight fever after the drain was removed and pain in the kidney, but these disturbances were transient. In another case a focus of inflammation had persisted in the seminal vesicles and was evidently the source for recurring gonorrheal joint trouble; the operation on the vesicles was followed by permanent subsidence of the joint symptoms. The second day after the operation the patient said that his previous pain in hip, shoulder and heel was gone; by the fourth day he had no pain except in the costal arch, and by the end of the second week he was free from pain of all kinds but the joints were still stiff. In another case pneumococci were responsible for the vesiculitis; there was no history of gonorrhea. This patient was a man of 59 who for two years had had pains on micturition and there was about 45 c.c. of residual urine. During the last year there had been pains in the sacral region and increasing stiffness in the lumbar spine, knees and hip joints so the patient could walk only with difficulty. The prostate was of normal size and soft but the vesicles were 7 and 8 cm. long and much swollen. The joint troubles have been much improved since the operation, and it is possible that the swelling of the seminal vesicles may have induced them by reflex action as there was nothing else found to explain them; the nervous and cardiovascular systems seemed to be clinically normal. In these and the other cases the assumption that the chronic inflammation of the seminal vesicles was responsible for the pains and stiffness in the joints is rendered plausible by the relief that followed the operation on the vesicles, although Voelcker never witnessed such wonderful results as Fuller has reported. The causal relationship with bladder and kidney affections seems more obvious

62. **Shutting Off the Blood from the Brain for Operations.**—Ritter reports three cases and numerous experiments on animals which apparently sustain his assertion that both carotid arteries can be clamped for a period of thirty minutes, thus shutting off the blood supply to permit an extensive operation on the skull, without permanent injury to the patient. His experience further shows that anemia of the brain for a period up to thirty minutes, from criminal violence or trauma, does not necessarily entail irreparable lesions and permanent cerebral disturbances.

Berliner klinische Wochenschrift

July 21, I., No. 29, pp. 1333-1380

63 Recent Progress in Optics and Gullstrand's Share Therein. (Einfluss Gullstrand's auf die Entwicklung der neuren Brillenoptik und die Einführung punktuell abbildender Brillen.) Gleichen.
64 *Comparative Pathology in Plants and Animals. (Aehnliches und Gegensätzliches in der pflanzlichen und tierischen Pathologie.) E. Bauer.
65 *Influence of Calcium Salts on the Kidney. (Einwirkung von Kalksalzen auf die Phloridzinglykosurie.) M. Jacoby. (Einwirkung von Kalksalzen auf die Funktionen der Niere bei gesunden und kranken Menschen.) G. Eisner.
66 *Action of Salvarsan on Kidney Functioning, Especially During Mercurial Intoxication. A. Loewy and W. Wechselmann.
67 New Instruments for the Duodenum and the Small Intestine. M. Einhorn (New York).
68 Mesothorium in Gout and Rheumatism. T. Görges.
69 *Adiposis Dolorosa. W. Kloninger.
70 *Treatment of Abortion. S. Hammerschlag.
71 *Air in the Abdomen after a Laparotomy. M. Cohn.
72 Radio-Activity Scale. (Ueber einen neuen Apparat für sämtliche Messungen der Radioaktivität.) B. Szilard.
73 The Backhaus Method of Preparing Milk for Infant-Feeding. (20 Jahre Erfahrung in der Kindermilchbereitung.) A. Backhaus.
74 Further Measures for the Campaign Against Tuberculosis. J. Landsberger.

64. **Comparative Pathology in Plants and Animals.**—Baur gives an interesting review of the analogies and the differences between pathologic processes in the vegetable and animal kingdom. The fungi are the most prominent parasites of plants but there are a number of true bacterial affections in plants. Their effect seems to be exclusively local, no general influence ever being apparent from them, and hence there is no production of antibodies in plants. New growths on plants may resemble tumors on animals, but their etiology is even more obscure and there seems little hope of their helping to clear up the problem of cancer.

65. **Action of Calcium on the Kidneys.**—Jacoby reported last year the history of a case of fibrous ostitis in which a brilliant cure followed administration of calcium and the metabolic findings showed retention of calcium at the time and later. When treatment was commenced there was an exaggerated output of calcium in the urine, even more than ever occurs with phosphaturia, but under treatment with the calcium salts the output declined. In order to explain this apparently paradoxic phenomenon, Jacoby gave calcium to dogs after glycosuria had been induced by the subcutaneous injection of phloridzin. At once or more gradually the urine contained less and less of sugar, acetone and nitrogen until finally it became nothing but almost clear water; the elimination of water did not seem to be affected. When there was no further elimination of anything but water, the dog died. The calcium salts used were the chlorid, acetate and lactate. An unmistakable function-reducing influence from them was apparent, and Eisner confirms this by report of similar experiments on five patients with kidney disease and two healthy persons with thirty examinations made of the output of sugar, acetone, albumin and nitrogen before administration of the calcium salts and thirty again afterward. In a few cases the kidney functioning showed no difference; it persisted equally good or equally bad after the calcium had been taken, but in the other cases a marked function-reducing action was unmistakable. The findings after death in the dogs and the clinical experiences seem to show that the kidney filter becomes less porous—possibly from mechanical obstruction by the calcium particles. Eisner declares that a drug which can thus cause retention of substances, natural or

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foreign to the organism, must be used with great caution as the effect is a direct impairment of kidney functioning. The fact that the percentage of albumin becomes reduced under the influence of the calcium is liable to be misinterpreted as a sign of improved kidney functioning, when in reality it is just the reverse.

66. **Influence of Salvarsan on the Kidneys.**—The research reported confirms the injurious action of salvarsan on kidneys which are already suffering from the action of mercury. Experiments on dogs under the influence of mercurial intoxication showed that the injurious influence was most marked on the water-eliminating function, up to complete anuria. It was found further that the urine might persist free from albumin to the end. In some of the dogs complete anuria followed the injection of salvarsan. In giving salvarsan, therefore, the necessity for supervising the diuresis is at once apparent, and the unreliability of trusting to the albumin content as an index of the functional capacity of the kidneys. The research reported further emphasizes that the danger from salvarsan is materially enhanced when the kidneys were not previously sound or were suffering from the effects of systematic mercurial treatment. It warns further against the practice of a combined mercury-salvarsan course of treatment.

69. **Adiposis Dolorosa.**—Kloninger's patient was a woman of 51 with a typical case of the painful deposits of flesh to which Dercum has given the above name. Besides the pain, restlessness and "hot flashes," there was much physical depression. An ovarian tumor had been removed two years before and the symptoms had come on since then. She was given thyroid tablet treatment systematically for four months, after which there was marked subjective and objective improvement. Mild hydrotherapy aided to complete the cure, with massage after the tissues had become less sensitive. From a helpless, bed-ridden condition, the woman is now able to be up and about, free from pain, "flashes," etc. Sézary recently published a similar case in which a course of ovarian treatment failed to relieve but a change then to thyroid treatment was speedily followed by a complete cure. Fresh thyroid was given in this case.

70. **Abortion.**—Hammerschlag insists that unless there are unmistakable signs of actual abortion, such as expulsion of scraps of fetal membranes, rudimentary contractions of the uterus, possibly only to be palpated and not experienced by the patient as pains, gaping of the internal os, fever, etc., uterine hemorrhage during the first months of a pregnancy should always be treated on the principle of preserving the pregnancy. The statements of the patient must generally be disregarded. Fromme found that 17.9 per cent. of 157 women with more or less uterine hemorrhage during the first months of pregnancy went on to term, and all but three had well developed children. Three had had hemorrhage for five days, three for a week, five for two weeks, three for three weeks, three for four weeks, seven for from five to seven weeks, one for three months, and one uninterruptedly for five months. Besides these groups, three other women went on to term after having had hemorrhage during the later months of the pregnancy. Hammerschlag says that with missed abortion, treatment should be expectant unless forced by complications. Febrile abortion, with the infection restricted to the uterus, requires its evacuation but done with extremest care to avoid injury to the tissues. Do not dilate the cervix unless absolutely necessary and then do it with laminaria, not metal. Then rinse out the uterus with 50 per cent. alcohol, then separate the membranes with the finger, not the curet. Then remove the scraps with the abortion forceps introduced under the guidance of the eye or with two fingers inserted in the cervix. The forceps must never be introduced farther than to just above the internal os. The scraps are worked into its jaws with the fingers, and the forceps is then drawn out and the uterus cavity examined with the fingers anew for more scraps. It is remarkable, he states, how even the inexperienced can thus clear out the uterus without injury to the tissues when a forceps without any sharp edges (Winter's) is used in this cautious manner, always under the guidance of the fingers.

71. **Air in the Abdomen after a Laparotomy.**—Cohn says that in a number of instances he has found that the supposed tympany following operation was merely the result of the presence of air sucked into the abdomen during the laparotomy. In most cases the air is gradually absorbed without harm, but if the heart is frail, the upward displacement of the diaphragm from the air, which naturally rises to the top of the abdominal cavity, may hamper it seriously, besides the effect on the respiration and intestines. The air may even compress the intestines enough to aid in producing postoperative paresis of the bowels. In one case during injection of nitrogen to make an artificial hydrothorax some of the gas escaped into the abdominal cavity and it was not completely absorbed until after six weeks.

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July 19, XLIII, No. 29, pp. 897-928

75 Recent Experimental Research on Alimentary Diseases. Saltykow.
76 Action of Opium Alkaloids and Their Combinations. E. Bernouilli.

July 26, No. 30, pp. 929-960

77 Surgical Experiences at the Seat of War. (Aus dem Balkankriege.) C. A. Pettavel.
78 Altitude and the Behavior of the Leukocytes. (Verhalten der Leukocyten im Höhenklima.) Wanner.

Deutsche medizinische Wochenschrift, Berlin

July 17, XXXIX, No. 29, pp. 1393-1440

79 *Azoospermia not Necessary Consequence of Bilateral Disease of the Testicles. (Zur Frage der Zeugungsfähigkeit bei bilateraler Nebenhodentuberkulose.) P. W. Fürbringer.
80 *Research on Animals Rendered Free from Leukocytes by Radio-Activity. (Studien um aleukozytären Tier: Ueber die Genese Lymphozyten in den Exsudaten seröser Höhlen.) Lippmann and Plesch.
81 *Behavior of Blood after Thyroidectomy. (Experimentelle und klinische Untersuchungen über das Verhalten des Blutes nach totaler und partieller Entfernung der Schilddrüse.) P. Reckzeh.
82 *Hematology in Service of Psychiatry. J. H. Schultz.
83 *The Acidity of the Stomach in Diagnosis of Gall-Bladder Disease. (Ueber Aziditätsverhältnisse des Magens bei Erkrankungen der Gallenblase und ihre therapeutische Nutzanwendung.) A. Ohly.
84 Indications for the Method of Duodenal Feeding. M. Einhorn (New York).
85 *Access to Hypophysis Cerebri Through Top of Skull. (Der intrakranielle Weg zur Exstirpation von Hypophysengeschwülsten.) W. Rupp.
86 *Simplified Technic for Cultivation of Syphilis Spirochetes. (Vereinfachung des Verfahrens zur Reinzüchtung der Syphilisspirochäten.) J. Schereschewsky.
87 Absorption of Mercury with Inunctions. H. Boruttau.
88 Articular Rheumatism in Soldiers. (Zur Pathologie und Therapie des Gelenkrheumatismus in der Armee.) K. P. Dannehl.
89 Electric Treatment of Obesity. (Erfahrungen mit dem Bergonisieren, einer neuen Methode für Entfettungskuren und Muskelgymnastik.) A. Veith.

79. **Azoospermia after Epididymitis.**—Fürbringer concludes from his own and others' experiences that bilateral tuberculous epididymitis is less liable to entail azoospermia than the gonorrheal. His experience in more than a thousand cases of azoospermia has been that it is incurable in about 80 per cent. of the bilateral gonorrheal cases; others have reported still higher percentages. On the other hand, the anatomic conditions with a tuberculous process may leave the passage partly permeable.

80. **Exudates in Aleukocytic Animals.** — Lippmann and Plesch found that absolutely no leukocytes could be detected in the blood of guinea-pigs after intracardial injection of thorium x. The local response then to injection into the peritoneum of a culture of swine-plague bacilli was a local exudation exclusively of monocytes. Irritation of the muscle induced merely necrosis, no inflammation. The small lymphocytes must consequently be derived from the endothelium and have no specific antigen character.

81. **The Blood after Thyroidectomy.**—The research was done on dogs and the minute details of the blood before and after are tabulated. The animals developed a secondary anemia usually about a week after the removal of the thyroid and

the blood-count revealed injury of the bone-marrow functioning, as in anemia from the action of blood-poisons. There was usually a relative lymphocytosis, the experimental results thus harmonizing with clinical experience.

82. **Diagnosis from the Blood in Psychiatry.**—Schultz supplies data to show that the leukocyte count has great differential value in psychiatry, especially in the diagnosis of epilepsy and dementia praecox. The stupor in the latter seems to be accompanied by a specific blood-picture, especially an accumulation of erythrocytes in the capillaries of the lobe of the ear. This "capillary erythrostasis" is the hematologic manifestation of the "pseudo-edema" of dementia praecox.

83. **Acidity of the Stomach with Gall-Bladder Disease.**—Ohly states from his research on forty-three patients with gall-bladder disease that with incipient trouble of this kind the gastric acidity seems to be above normal. As the gall-bladder disease progresses, however, the gastric acidity declines until there is anacidity or actual achylia in about 70 or 80 per cent. of all cases of cholecystitis. This subnormal acidity should be borne in mind in treating the cholecystitis, and it also may aid in differentiating between pyloric or duodenal ulcer and cholelithiasis in some cases.

85. **Intracranial Access to the Hypophysis.**—In a case described the tumor in the hypophysis had grown inward and was thus accessible only from directly above. Rupp found it feasible and comparatively simple to turn back a bone and soft part flap from the orbit to the coronal suture, push the brain out of the way and shell out the tumor. There proved to be already metastases in the brain and elsewhere so the operation failed to cure the patient. He survived thirty hours and there was no trace of postoperative paralysis, but he did not regain consciousness although still responding to external stimuli, and micturition was spontaneous.

86. **Cultivation of Syphilis Spirochetes.**—Schereschewsky calls attention to the extremely simple and reliable technic which permits cultivation of the spirochetes in pure cultures. The medium is sterile serum derived from different horses. A test-tube is filled nearly up to the cork with this serum and heated in a water bath at 65 C. until it is no longer fluid. An aseptically excised syphilis papule is then pushed half way down into the test-tube, with care not to disturb the serum any more than is actually necessary. Tapping on the side of the tube will let any air left in the tube escape. The tube is then plugged tight with the cork again and kept at 37 C. for eight days. The tube is then cut off below the papule and some of the culture medium is transferred to a slide and examined with the dark field microscope. The cork prevents the contents from drying out as with a cotton plug.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, CXXIII, Nos. 1-2, pp. 1-220

90 Suture of Vessel with Aneurysm. (Anwendung der Gefässnaht bei der Behandlung der Aneurysmen.) E. Tschernachowski.
91 Value of Unpedunculated Flaps to Reenforce Sutures. (Vergleichende Studien über den Nahtverstärkungswert des ungestielten Netz-, Peritoneal- und Mesenteriallappens.) J. Saski.
92 Sarcoma of the Intestines. (Darmsarkome.) W. Wortmann.
93 Amputation in Shoulder for Recurring Cancer of the Breast. (Vorschlag zur Abnahme des Armes nebst zugehörigem Schultergurtel bei gewissen Formen und Rezidiven des Mammacarcinoms.) F. Franke.
94 Correction of Deformity of Lower Jaw. (Zum osteoplastischen Ersatz von Unterkieferdefekten.) R. Gibbell.
95 Dislocation of the Bones of the Hand. (Luxatio intercarpea.) L. v. Mayersbach.
96 Congenital Dislocation of the Knee. A. Wachter.
97 General Anesthesia Under Atmospheric Overpressure. (Ueberdrucknarkosapparate.) W. Gerlach.

Jahrbuch für Kinderheilkunde, Berlin

LXXVIII, Supplementary No. pp. 1-308

98 Metabolism in an Atrophic Infant. K. Frank and G. Wolff.
99 *Dietetic and Therapeutic Measures in Spasmophilia. (Die Einwirkung alimentärer und pharmakodynamischer Faktoren auf den Verlauf der Spasmophilie.) F. Zybell.
*99 No Hereditary Predisposition to Scarlet Fever. (Giebt es für Scharlach und seine Komplikationen eine familiäre Disposition?—Andere Scharlachfragen.) A. Mathes.
101 Development of the Chest and Its Relation to Rachitis. (Die Entwicklung des Thorax von der Geburt bis zur Vollendung des Wachstums und ihre Beziehungen zur Rachitis.) E. Zeltner.
102 Case of Myotonia Congenita. (Zur Pathologie und Klinik der Myotonia Congenita—Oppenheim.) L. Kaumheimer.
103 *Relation of Intestinal Intoxication to the Sympathetic Nervous System. H. Hirschfeld.
104 Hereditary Predisposition to Fractures. (Ueber angeborene Knochenbrüchigkeit.) K. Bamberg and K. Huldschinsky.
105 *Post-Diphtheritic Cerebral Paralysis. A. L. Dynkin.

July, LXXVIII, No. 1, pp. 1-124

106 Albumin-Cream Milk in Infant-Feeding. (Säuglingsernährung mit einer einfachen Eiweiss-Rahmmilch.) E. Feer.
107 The Spasmophilia Problem. E. Freudenberg and L. Klocman.
108 Is There a Specific Odor in Infectious Diseases? (Gibt es einen spezifischen Geruch bei Infektionskrankheiten?) N. Krasnogorski.
109 Chronic, Non-Tuberculous Lung Disease in Young Children. R. Lederer.
110 Diverticulum Above Cicatricial Stenosis of the Esophagus. H. Flesch.

99. **Dietetic and Therapeutic Treatment of Spasmophilia.**—Spasmophilia has been recognized as a clinical entity only for the past few years, since the method of testing the muscles for hyperexcitability to the electric current has been in use. Zybell reports twenty-nine cases in which various dietetic and therapeutic measures were tried. Two-thirds of the children were in their first year and half of them under 6 months of age. No special diet was found to have a uniform effect on the condition. The usual practice of keeping the child on starvation diet for twenty-four to forty-eight hours he found did more harm than good. He believes that spasmophilia is not due to a deficiency of calcium salts. Treatment with salts of calcium, magnesium and sodium had no effect. The only remedy that was found to have a uniform and pronounced beneficial effect was a solution of phosphorus in cod liver oil. Rosenstern recommends that in severe cases this be given in large doses—5 gm. five times per day of a solution of 0.01 gm. phosphorus in 200 gm. cod liver oil.

103. **The Sympathetic Nervous System and Intestinal Intoxication.**—Hirschfeld believes that the disintegration products of albumin metabolism circulating in the blood stimulate the sympathetic nervous system and bring about a condition of hypertonicity which manifests itself in the clinical symptoms of intestinal intoxication. He applied the epinephrin test of the eye in 265 cases, twenty of them with intestinal intoxication, and found it positive in all these twenty cases. He gives in brief nineteen case-histories showing the parallelism between the severity of the intoxication and the tonus of the sympathetic system.

105. **Cerebral Paralysis after Diphtheria.**—Dynkin describes two cases of unilateral hemiplegia following diphtheria, and gives an extensive review of the literature of the subject. These paralyses occur only after very severe forms of diphtheria. In all cases physical signs of heart failure are manifest, such as arhythmia, murmurs and dilatation. They occur mostly in the third or fourth week of the disease. A paresis of the facial and hypoglossus nerves and aphasia are generally observed in conjunction with them. In many cases there are also peripheral disturbances, such as paralysis of the soft palate and of accommodation, failure of patella reflex and incontinence of urine and feces. The cause of postdiphtheritic hemiplegia is generally an embolus from heart thrombosis; much more rarely thrombosis of the cerebral vessels.

Medizinische Klinik, Berlin

July 20, IX, No. 29, pp. 1159-1190

111 *Tuberculosis of the Skin. (Behandlung der Hauttuberkulose.) J. Jadassohn.
112 *Dietetic Treatment of Gout. (Gicht.) A. E. Garrod.
113 Optic Neuritis with Neurofibromatosis. F. Pincus.
114 Conservative Treatment of the Tonsils. C. Kassel.
115 *Albumin Reaction in Sputum in Diagnosis of Tuberculosis. H. Schmitz.
116 The Urobilinogen Reaction in the Urine. O. Simon.
117 Chemistry of the Protoplasm and Nuclei of the Cell. R. Muschler.

111. **Tuberculosis of the Skin.**—Jadassohn has had extensive experience with roentgenotherapy, the two-route treatment, and all other modern methods of treating tuberculous

invasion of the skin, and has found roentgenotherapy remarkably effectual in many cases so that surgical measures have been more and more restricted of later years. But when the mucous membranes are involved, the actual cautery still seems to give the best results attainable. He is convinced that too timid dosage of the Roentgen rays has caused lupus cancer to be more prevalent than it would be without it. He insists in conclusion on the importance of practitioners recognizing tuberculous skin lesions when they first appear, so that treatment can be applied in time to render it promptly effectual. The ordinary skin diseases of children should be kept clean and healed up as soon as possible, and it should be borne in mind that everything useful in the prophylaxis of pulmonary tuberculosis has its place also in warding off tuberculosis cutis.

112. **Management of Gout.**—Garrod declares that the greatest progress in this line in recent years is the recognition of the important part played by uric acid in metabolism and the discovery that a diet can be arranged which is almost free from purins and yet contains plenty of albumin; milk, eggs and cheese are particularly useful on this account. But he emphasizes that the diet is not everything in the management of gout; moderation in all things, not merely in eating and drinking, is the golden rule by which the gouty are kept free from attacks. Avoidance of fatigue and of even the slightest trauma and everything liable to upset the precarious balance is the key to success. He had a patient develop an attack after mere removal of ear wax; another has an attack whenever he takes a long railroad ride.

113. **The Albumin Reaction in the Sputum.**—Schmitz examined the sputum from 100 patients and states that his findings sustain the importance of this welcome addition to our means of diagnosing pulmonary tuberculosis. He found albumin in the sputum in nearly every case of beginning pulmonary tuberculosis long before tubercle bacilli could be detected. At the same time the reaction was negative in some cases of manifest tuberculosis. The negative cases seemed to be those with a tendency to proliferating cicatricial changes, while albumin was present in all the cases of the inflammatory exudation type. (Application of the test for quantitative estimation was reported in THE JOURNAL, Oct. 26, 1912, p. 1537.)

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXVI, No. 4, pp. 479-552. Last indexed July 12, p. 156

118 *Antipepsin in Blood Prevents Autodigestion of Tissues. (Zur Frage der Verdauung lebenden Gewebes im Magen, zugleich ein Beitrag zur Pathogenese des runden Magengeschwüres.) K. Kawamura.

119 *Neurotic Duodenal Ulcer. (Das neurotische Ulcus duodeni.) K. Westphal and G. Katsch.

120 *Aneurysm of Cerebral Arteries. (Hirnarterienaneurysmen und ihre Folgen.) A. Reinhardt.

121 *Artificial Respiration. (Ueber künstliche Atmung.) G. Liljestrand.

122 Sensitiveness of Visceral Organs and Abdominal Tissues in General. (Zur Frage der Sensibilität der Bauchhöhle.) M. Kappis.

123 *Roentgenoscopy of Uric-Acid Arthritis. (Die Arthritis urica im Röntgenbilde.) E. Jacobsohn.

118. **Why Living Tissue Is Not Digested by Its Own Juices.** Kawamura's research seems to establish the presence of an antipepsin in the circulating blood which prevents the gastric juice from digesting the stomach walls. Only when there is some interference with the blood-supply, shutting it off from a certain area, is the corroding juice able to exert its destructive action on the tissues. A gastric ulcer is thus primarily the result of shutting off part of the blood-supply from the wall of the stomach at this point.

119. **Neurotic Duodenal Ulcer.**—Westphal and Katsch report from von Bergmann's clinic at Altona thirty cases of duodenal ulcer confirmed by operation or necropsy, calling attention to the varying clinical picture in this material. The presence of the ulcer keeps up a constant irritation of the vegetative nervous system, and this may manifest itself at points remote from the actual seat of the ulcer. Most of the symptoms are the work of the secondary gastric neurosis, and the fluctuations in the neurosis are responsible for the objective findings and for some of the symptoms and subjective disturbances. The peculiar tenacity of the neurosis is due, they think, to the anatomic lesion which prevents the vegetative system from getting any rest or regaining its balance. Treatment should be directed against both the neurosis and the anatomic lesion. Atropin will aid in combating the neurosis by modifying the innervation; by thus aiding to correct the correlated neurosis, it will break into the vicious circle and, by setting the ulcer at rest, aid in its healing. Internal treatment along these lines is peculiarly beneficial when the stomach troubles are of purely neurotic nature and secondary to the duodenal ulcer. The treatment otherwise for both duodenal and gastric ulcers should be along the same lines, resting and sparing the organs as much as possible. The anatomic lesion may be combatted by direct surgical intervention or indirectly, by transforming the abnormal muscle functioning. By putting an end to the constant irritation from the ulcer, the vegetative nervous system will gradually have its balance restored and the neurotic symptoms will consequently subside. A direct operation on the ulcer is indicated only after failure of systematic and long continued internal treatment or when there is hemorrhage or perforation. The neurotic element in duodenal ulcer disturbances causes the clinical picture to vary in different cases so widely that it is more than probable that the primary ulcer has not been recognized in many such cases. The neurosis may affect the motor functioning or the secretory functioning. In the former, the clinical picture is that we are accustomed to with gastric hyperacidity; in the excessive-secretion form, the clinical picture is that of true Reichmann's disease. They compare two cases to illustrate these types: One had pain only when the stomach was being evacuated; the other the hunger pain exclusively at night. One had no vomiting; the other vomited frequently. One had constant tenderness at the "duodenal point;" the other never had tenderness here. One had moderate hyperacidity; the other extreme hyperacidity and parasecretion. The stomach in one was excessively tonic, with extreme hypermotility; in the other the stomach was hypotonic and stretched, with only weak peristalsis. The duodenum bulged in one; the pyloric region with the spasm of the pylorus in the other. The stomach in one hastily expelled its contents, at least at first, while the other patient had retention of stomach contents over six hours.

The distinguishing characteristics of the two types may be expressed by the terms "hyperperistaltic duodenal ulcers" and "maximal-secretion duodenal ulcers." The common features of the two types are that the patients have had gastrointestinal disturbances off and on for years, with periods of entire subsidence of all trouble; both have a circumscribed area of tenderness, one at Boas' right tender point and a history of tenderness over the duodenum although not to be elicited at present; the other with constant tenderness over the duodenum. Both have a tendency to hypersecretion in the stomach although with wide difference in the degree. Both have other signs of derangement of the vegetative nervous system, and in neither of the two typical cases contrasted above had there been any known bleeding. The operation first confirmed the presumptive diagnosis of a duodenal ulcer.

Much research work is being done at this clinic on the regulators of the intestinal tract and peptic ulcers of spasmogenic origin. Spasmodic contraction of the smooth muscle seems to be the cause of the pains with peptic ulcer and possibly may be the primary cause of the ulcer itself. A recess casting a shadow in the duodenum is not only pathognomonic of duodenal ulcer but it confirms that it has bored into the tissues. Another typical finding is the continuous retention of the bismuth suspension in the upper part of the duodenum, the *Dauerbulbus duodeni*, especially when the duodenum here is distorted. Almost every detail in the history and present status of a duodenal ulcer case occurs likewise with merely a gastric ulcer, confirming anew the importance of the element of neurosis. The thirty cases are analyzed in detail.

120. **Aneurysm of Cerebral Arteries.**—Reinhardt reviews ten cases, five in women between 30 and 58, five in men between

18 and 72. In four cases a congenital predisposition was evident and in three others probable; in two syphilis was responsible. The aneurysms were quite small except in one case in which the very large aneurysm simulated a malignant tumor in the sella turcica; it had induced symptoms for nine years, gradually growing more severe. At the operation the bleeding was assumed to be of the venous type owing to the anatomic conditions; the fact that an artery was involved was not recognized until too late.

121. **Artificial Respiration.**—Liljestrand reviews the history of artificial respiration and states that the results of rhythmic compression of the chest are not very encouraging. Better methods than this for artificial respiration are urgently needed, and he thinks that the pulmotor or Meltzer's method of intratracheal insufflation should be more generally available and applied. The rhythmic compression methods do not supply adequate ventilation for the lungs but may advantageously supplement the Meltzer method, at least.

123. **Gouty Arthritis.**—Jacobsohn gives a number of illustrations of the Roentgen-ray findings in eighteen cases of uric acid arthritis, all showing that the deposits have a destructive influence on the bone beneath. This suggests the advisability of removing gouty tophi to prevent further injury of the joint. In many instances roentgenoscopy alone cleared up the diagnosis when the clinical picture was apparently merely ordinary chronic rheumatic arthritis; in other cases the diagnosis of gout was not confirmed by roentgenoscopy. The findings with the latter should be weighed in connection with the metabolic findings.

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XXXVIII, Supplementary No., pp. 1-108

124 Etiology of Atresia of the Vagina. (Zur Aetiologie der Gynatresien.) F. Thoma.
125 Use of Placentar Extract as a Lactagogue. (Zur Frage der Placentarhormone und der Verwendung von Placentarsubstanzen als Laktagoga.) F. Niklas.
126 *Treatment of Abortion. (Klinische und bakteriologische Beiträge zur Abortionstherapie.) E. v. Mihalkovics and E. Rosenthal.
127 Case of Prolapse of the Ureter Through the Urethra. (Ueber den Vorfall des Harnleiters durch die Harnröhre, nebst Bemerkungen zur Histologie des Oedema bullosum.) O. v. Franqué.
128 *End-Results of Obstetric Operations. H. Schröder.
129 *By-Effects of Hypophysis Medication. R. Hofstätter.
130 *Abnormal Size of Infants at Birth. (Zur Aetiologie des Riesenwuchses mit Berücksichtigung seiner forensischen Bedeutung.) A. Hübner.
131 Signs of Maturity in the New-Born Child. M. Kjolseth.
132 *Women in Industry and Women's Diseases. (Frauenerwerbsarbeit und Frauenkrankheit.) M. Hirsch.

July, XXXVIII, No. 1, pp. 1-124

133 Relation of Menstruation to Ovulation. (Neue Ansichten über die Menstruation und ihr zeitliches Verhalten zur Ovulation.) R. Schröder.
134 *Physiology of the Hypophysis. H. Schlimpert.
135 Serodiagnosis of Pregnancy. (Die Diagnose der Schwangerschaft mittels des Dialysierverfahrens und der optischen Methode.) E. Abderhalden.
136 Interruption of Pregnancy for Kidney Disease. (Schwangerschaft und Nierenleiden.) Schlayer.
137 Serodiagnosis in Obstetrics and Gynecology. T. Petri.
138 *Exophthalmic Goiter and the Genital Organs. A. E. Lampé.

126. **Treatment of Abortion.**—Mihalkovics and Rosenthal had 1,147 cases of abortion between Jan. 1, 1910, and June 30, 1912, with a mortality of 0.5 per cent., all being cases of beginning or incomplete abortion. In the last 100 cases bacteriologic examinations were made. They found microorganisms in every case, and in many cases several kinds. In all but one case there were pathogenic bacteria of some kind. In eighty-five cases staphylococci were found. They believe treatment should be based on clinical symptoms and not on bacteriologic findings; 875 patients were given active treatment and 272 expectant. Active treatment generally consisted in dilating the cervix with tampons and emptying the uterus with the finger; only in cases in which it was necessary, dilatation by Hegar's method and curetting. They prefer the active to the expectant treatment not only because it yields better therapeutic results but because it meets the economic needs of the patients by enabling them to return to their work sooner.

128. **Final Results of Obstetric Operations.**—Schröder found from a study of statistics for the years 1893-1905 at Bonn that of the children delivered by cesarean section and induced premature labor, fully one-half, possibly more, were dead before the end of the first fifteen months. This large mortality is partly due to the operation, partly to the fact that the economic situation of the parents is such that they cannot properly care for the infants, who need more than ordinary attention. Schröder believes that in view of this heavy mortality, of the hardships inflicted on parents and child, and the prolonged inability of the mother to work following the obstetric operation, it would in many cases be preferable to perform a mutilating operation on the child, unless the parents especially desire the maternal operation.

129. **Hypophysis Treatment.**—Hofstätter finds that except where overdoses have been given there have been no bad results from administration of hypophysis extract aside from some unpleasant, but not serious nervous manifestations. No injury to the kidney has ever been demonstrated. It should be given with caution to persons with uncompensated heart lesions or severe arteriosclerosis and to very nervous patients. The chief difficulty in its administration, he remarks, is that there is no standardized preparation which makes it possible to give an accurate dosage of the physiologically active substances.

130. **Abnormally Large Infants at Birth.**—Hübner says that infants over nine pounds in weight are born in over 3 per cent. of deliveries. A weight of over thirteen pounds very rarely occurs. He discusses at length the medicolegal bearing of the question as to whether abnormally long gestation can be given as a reason for the development of a large fetus. He concludes that the legal limit of 302 days safeguards the interests of illegitimate infants.

132. **Women in Industry and Women's Diseases.**—Hirsch calls attention to the increasing participation of women in industry in all countries. The percentage of women engaged in gainful pursuits varies from 42.8 per cent. in Austria to 8.4 per cent. in Russia. This entails on women the double burden of industrial labor and motherhood, to which is often added that of household work. He gives statistics showing the number of women engaged in various industries in Germany. Bad hygienic conditions and overwork affect women more severely than men. Among 10,000 working men from 25 to 34 years of age the yearly mortality was 492; that among an equal number of working women was 601, although the mortality for women in homes of the same social classes was about the same as for men. Tuberculosis is especially prevalent among women working in tobacco factories and printing establishments; also among workers in glass factories, from inhalation of dust. Anemia and chlorosis are frequent among workers in the textile trades and in all places where air and light are deficient. All these diseases have disastrous secondary effects on pregnancy and labor. Abortions are about seven times as frequent among employed as among non-employed women; premature births six times; placenta praevia, hemorrhage, pernicious vomiting and extra-uterine pregnancy two and a half times, pathological puerperium lasting more than thirteen weeks, five times.

Lead poisoning has a particularly active effect in producing abortions. It has been found in the organs of the fetus, and children of women working in lead show a special tendency to epilepsy, paralysis and hydrocephalus. Overwork also causes secondary diseases of the generative organs, especially in young girls who go to work at 13 or 14, at about the time menstruation is being established. Physicians, and more particularly women physicians, have before them the social task of seeing that the law provides adequate protection for women in industry.

134. **Physiology of the Hypophysis.**—Schlimpert tried to determine from experiments on cattle whether there was any change in the hypophysis during pregnancy. The essential principle of the gland does not seem to be present in greater

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quantity in the pregnant than in the non-pregnant animal. It can be demonstrated in embryos of cattle at the tenth week by its vasoconstrictive action, and from the twenty-eighth week also by its effect on respiration.

138. **Exophthalmic Goiter and the Genital Organs.**—Lampé believes that Basedow's disease is caused by a disorder of the branchiogenous organs, including the thyroid, due to embryonic predisposition. This abnormal function brings about a secondary disorder of the genital glands, which are antagonistic to the thyroid in their action.

Münchener medizinische Wochenschrift

July 22, LX, No. 29, pp. 1585-1640

139 *Simple Technic for Phagocyte Index. (Zur Bestimmung des phagocytären Index und dessen klinische Bedeutung.) R. Stuber and F. Rütten.

140 *Compressive Treatment of Pulmonary Tuberculosis. (Ueber extrapleurale Pneumolyse mit sofortiger Plombierung bei Lungentuberkulose.) G. Baer. (Ueber Pneumolyse.) F. Jessen.

141 Improved Technic for Diagnostic Injection of Animals. (Tuberkulosenachweis im Tierversuch mit Hilfe der Pirquetschen Reaktion.) E. Conradi.

142 Serodiagnosis. (Experimentelle Untersuchungen über die Spezifität der proteolytischen Abwehr — Schutz — fermente, Abderhalden. II.) E. Frank, F. Rosenthal and H. Biberstein.

143 Paroxysmal Tachycardia; Fifteen Cases. K. Grassmann.

144 Dressing for Fracture of the Clavicle. (Zur Behandlung des Schlüsselbeinbruchs.) N. Kaefer.

145 Lesions of the Cornea after General Anesthesia. (Hornhautläsionen nach Narkosen.) O. Schnaudigel.

146 Distillation of Water. A. G. Barladeau.

147 Paper Mask. (Gesichtsschutzvorrichtung aus Papier.) Levinger.

139. **The Phagocyte Index.**—Stuber and Rütten remark that the opsonic count has not made much headway in Germany; there is a general distrust of the hypothetic opsonins while the technical difficulties are great. They have worked out a very simple method for the phagocyte count which throws light on the vital functional capacity and behavior of the leukocytes. Instead of trying to determine the phagocytic capacity of the leukocytes in regard to the special germs responsible for the trouble in the individual case, they sought to determine the vital capacity of the leukocytes in the individual case as tested with a standard object to be phagocyted. After many tentative experiments they found the spores of the thrush fungus, *Oidium albicans*, apparently the best adapted for the purpose. It is cultivated on glycerin-agar with 0.25 or 0.5 per cent. eosin on which it develops without filamentous threads, running only to spores during months of cultivation. A culture of this fungus is suspended in an artificial serum (7.5 c.c. sodium chlorid; 6 c.c. sodium citrate and distilled water to 1,000 c.c.). The leukocytes are liable to clump unless there is some homogeneous serum or ascitic fluid present or other solution of albumin. They found a saturated aqueous solution of egg albumin best for the purpose. In a centrifuge tube are placed 0.1 c.c. of the artificial serum; 0.1 c.c. of the ovalbumin solution; 0.03 c.c. of the suspension of the thrush fungus, and 0.03 c.c. of the blood to be examined. The contents of the tube are well mixed with a platinum needle and the tube is then kept for forty-five minutes at 37 C. It is then centrifuged for one minute with about 800 turns. Most of the red corpuscles are then in the tip of the tube, above this comes a layer of leukocytes, and above this the serum. The serum is then aspirated out; the long drawn out tip of the tube, containing the red corpuscles, is then broken off. The leukocytes are thus left in the tube and they are easily blown out on an object glass and stained by Leishman's technic. The thrush fungus spores take a bright blue and are encircled with a white halo. They count the number of spores in 200 leukocytes; with normal phagocytes there will be 200 spores in 200 leukocytes, so the index will be $\frac{\text{Number of spores}}{\text{Number of leukocytes}} = 1$. This is the standard index in health. The individual index is the $\frac{\text{Patient's index}}{\text{Normal index}} = \text{Phagocytic Index}$. The whole technic is thus extremely simple and in the cases cited the low index at the height of the disease and its gradual rise during convalescence amply demonstrate how the phagocytic index mirrors the capacity and power of the organism to combat invading infection. Among the important information which it affords may be mentioned the differentiation of gastric ulcer from gastric cancer as the phagocytic index shows that the organism is not depressed by malignant disease. The index varies in health from 0.8 to 1.2; when it is merely 0.5 the defensive forces are evidently at a low ebb. Of course it is a delicate biologic reaction, and it is necessary to test the fungus spores occasionally with normal blood to detect degeneration.

140. **Compression of the Lung by Separating it from the Chest Walls with or without Filling up the Space Left.**—Baer and Jessen each present a contribution to this subject, reporting clinical experience which encourages further work in this line. Baer's method is to detach the pleura from the ribs and fit into the extrapleural space thus made a paraffin filling. For each 75 c.c. of paraffin with a melting point at 58 C., he adds 25 c.c. of paraffin melting at 50 C. and 1 gm. bismuth and a little mild disinfectant. This is thoroughly blended and with a knife chunks of the jelly-like mass are fitted into the extrapleural space and the skin is sutured at once. He has thus treated two patients, as he describes at length with the necropsy findings in one who had fatal tuberculous meningitis seven weeks afterward. The cavities were found entirely obliterated and scarcely recognizable. The experiences related seem to demonstrate the harmlessness of the method in comparison with resection of ribs; the necropsy findings show that the filling heals without inflammation. There is no danger of aspiration while expectoration was promoted from the very first, and the amount of sputum dropped from 150 to 50 c.c. and from 130 to 15 c.c. in a remarkably short time. There is merely a linear scar left while the chest retains its normal outline. The great advantage of Baer's technic is that the compression by the extrapleural pneumolysis and filling is applied exactly at the point where it is needed, not over the whole lung as with an artificial pneumothorax with which the sound parts of the lung as well as the diseased are compressed.

Jessen reports similar experiences only he found in the course of the six cases in which he has applied pneumolysis that the filling is not necessary; the desired results are attained without this. Adhesions sometimes interfere with the success of the pneumolysis, just as with making an artificial pneumothorax, but when it succeeds the effect is as good as with excision of ribs without the shock of the latter and the resulting disfigurement. If the lung can be detached sufficiently more or less all around no filling is necessary. If a filling is required he prefers a mixture of equal parts of white wax and white vaselin, with 0.5 per cent. magnesium carbonate and salicylic acid; this is absorbed more slowly than Baer's paraffin mixture, he says. A piece of a rib is resected and the finger is worked between the periosteum and endothoracic fascia and the lung detached. In his first case a young man had a cavity in each upper lobe with pleuritic adhesions. After resection of 3 cm. of the second rib on the left side, the apex and upper lobe down to the fourth rib were detached and 200 c.c. of the wax-vaselin filling injected. No effect on the sputum was observed. Three weeks later the lung on the other side was detached except for a cord-like adhesion fastening it to the first rib. No filling was injected on this side, but at once the sputum dropped from 50 c.c. to 10. In another case 300 c.c. of paraffin were injected after the pneumolysis; the eighth day the region protruded and the paraffin was forcibly expelled, with fluid, the whole resembling a delivery. There was no febrile reaction, the parts soon healed, and the sputum dropped from 50 c.c. to 15 and the patient seemed transformed, all toxic symptoms subsided and roentgenoscopy shows the large cavity collapsed as completely as after thoracoplasty. Two other cases show that adhesions may interfere to prevent a favorable outcome, and resection of several ribs to mobilize the chest wall may be the only

resource. In all the cases there was a rise in temperature after the pneumolysis, the manipulation of the lung evidently forcing toxins into the circulation.

Wiener klinische Wochenschrift, Vienna

July 24, XXVI, No. 30, pp. 1233-1264

148 *Biologic Test for Progressive Paralysis. (Eine diagnostisch verwertbare Reaktion in der Spinalflüssigkeit von Paralytikern.) H. Maruyama.

149 Skin Reaction after Injection of Colloidal Metals. (Ueber allergieähnliche Erscheinungen an der Haut nach Einverleibung von kolloidalen Metallen.) R. Ilift.

150 Serodiagnosis of Exanthematous Typhus. (Zur serologischen Diagnose des Flecktyphus.) Markl.

151 Magnesium Salts and Calcium-Precipitating Salts Neutralize Certain Poisons. (Die pharmakologische Wirkung von kalziumfällenden Säuren und Magnesiumsalzen.) E. Starkenstein.

152 Obesity as Result of a Basophil Adenoma in the Hypophysis. (Zur Frage der Adipositas hypophysarea.) T. Bauer and H. Wessely.

153 Central Dislocation of the Femur. M. Haudek.

148. **Biologic Test for Progressive Paralysis.**—Maruyama found that guinea-pigs injected two or three weeks before with 0.02 c.c. of human blood-serum died in a few minutes with symptoms of anaphylaxis after an intravenous injection, for each 100 gm. of body weight, of 1.5 to 2 c.c. of the cerebrospinal fluid from a person with progressive paralysis. No effect or but insignificant effect followed when the fluid was derived from patients with other nervous or mental affections.

Zeitschrift für Kinderheilkunde, Berlin

VIII, No. 3, pp. 187-290

154 Determination of Calcium Content of the Blood in Children by Wright's Method. M. Katzenellenbogen.

155 Diagnosis and Treatment for Oxyuris Vermicularis. Trumpp.

156 The Iso-Electric Points of Human Milk and Milk of Various Animals. (Der isoelektrische Punkt des Menschen-, Kuh-, Ziegen-, Hunde- und Meerschweinchen- Milchcaseins.) A. Yippö.

157 Metabolism in Dyspepsia and Intestinal Intoxication. I. Jundell.

Zentralblatt für Chirurgie, Leipsic

July 26, XL, No. 30, pp. 1169-1208

158 Ligation of Pylorus with Strip of Fascia Plus Pyloropexy; Two Cases. A. Hofmann.

159 Aseptic Enterostomy. A. Wolff.

160 Improved Technic for Radical Operation in Two Sittings for Cancerous Stenosis of the Sigmoid Flexure. M. Madlener.

161 Fascia Lata Patch for Resection of the Liver. B. Chessin.

Zentralblatt für Gynäkologie, Leipsic

July 26, XXXVII, No. 30, pp. 1101-1140

162 Technic for Bathing the New-Born Infant. (Ueber das Baden der Neugeborenen.) F. Weisswange.

163 Cesarean Section Done by the Pregnant Woman Herself. Fourth Case on Record. Smooth Recovery Shows Resisting Power of the Peritoneum. (Zur Widerstandskraft des Peritoneums und der Uterusnaht nach Sectio caesarea—von der Patientin selbst ausgeführt.) R. Patek.

Zentralblatt für innere Medizin, Leipsic

July 26, XXXIV, No. 30, pp. 753-776

164 Uric Acid in the Saliva. (Vorkommen von Harnsäure im normalen und pathologischen Speichel.) E. Herzfeld and A. Stocker.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 13, XXXIV, No. 83, pp. 855-870

165 Torsion of the Omentum. R. Cinaglia.

July 15, No. 84, pp. 871-878

166 *Diagnostic Puncture of the Lung in Pneumonia. A. Bertolini.

July 17, No. 85, pp. 879-886

167 Influence of Hypophysis Extract on Elimination of Hippuric Acid. A. Farini and B. Ceccaroni.

July 20, No. 86, pp. 887-902

168 Hernia of the Stomach. (Ernia epigastrica dello stomaco.) C. Mantelli.

July 22, No. 87, pp. 903-910

169 Cancer of the Thymus in Man of 50. (Neoplasma del timo con sindrome di mielite transversa da metastasi vertebrali.) Roccavilla

166. **Puncture of the Lung in Pneumonia.**—Bertolini declares that cautiously done it is a simple and harmless matter to puncture the morbid focus and thus verify the bacteriologic diagnosis and obtain material for vaccine therapy. The findings show the state of the process and its gravity. The method has been extensively applied in Italy and he tabulates here the details in twenty-nine cases of pneumonia and three which proved to be merely bronchitis. Large numbers of diplococci in the fluid are a bad sign. The findings were constantly negative during the crisis and afterward. The needle must not be introduced near the hilus and only in the seventh, eighth or ninth interspace, front or rear, as otherwise it is liable to injure a vessel. From the front it can further be introduced in the second or third space. No trace of injury from the needle or even of its passage was detectable in the lungs after death.

Policlinico, Rome

July 20, XX, No. 29, pp. 1029-1064

170 Identity of Kala-Azar in Man and Dog. (I recenti studi sull' identita della leishmaniosi umana e canina del Mediterraneo.) C. Basile.

July 27, No. 30, pp. 1065-1100

171 *The Urea Index with Kidney Disease. (La constante uremica di Ambard o il coefficiente ureo-secretorio per la valutazione della funzionalita renale.) A. L. Bonanome.

171. **The Urea Index with Kidney Disease.**—Ambard's formula was given in THE JOURNAL, July 20, 1912, p. 229, and Sept. 7, 1912, p. 818. Bonanome regards it as an important aid in estimating the functional capacity of the kidneys. To obtain the maximum information from it, he says, it should be associated with Martinet's pulse-kidney coefficient and Albarran's method of experimental polyuria. (Martinet's functional index was described in THE JOURNAL, Jan. 18, 1913, p. 248, and the experimental polyuria test Jan. 4, 1913, p. 90.) The insight into kidney functioning afforded by these various tests is truly remarkable, Bonanome states, and illustrates by a few concrete examples.

Riforma Medica, Naples

July 12, XXIX, No. 28, pp. 757-784

172 Cysts from Absence of Vas Deferens. Two Cases. (A proposito di due casi di cisti spermatica con assenza del dotto deferente.) G. de Francisco.

July 19, No. 29, pp. 785-812

173 Influence and Action of Epinephrin in Muscular and Mental work. (L'adrenalina nel lavoro muscolare ed intellettuale.) V. Palmulli.

174 Dystrophy from Defective Internal Secretions. (Distrofia endocrino-simpatica: ipogenitalismo con emilipomatosi diffusa della cute.) C. Bartolotti.

Brazil Medico, Rio de Janeiro

July 5, XXVII, No. 26, pp. 259-270

175 Technic, Indications and Advantages of Direct Transfusion of Blood. C. Werneck. Commenced in No. 25.

Semana Medica, Buenos Aires

June 26, XX, No. 26, pp. 1477-1536

176 Treatment of Chronic Nephritis Based on Modern Tests of Kidney Functioning (Nuevos conceptos del mal de Bright.) J. M. Cabezon.

177 Continuous Digitalis Medication. (La digitaloterapia cronica.) M. F. Castex.

178 Artificial Plasmogenesis. (Los comienzos de la vida. El reino protobial.) V. Delfino.

179 Treatment of Pseudarthrosis by Bone Autoplastic Operation. H. F. Lista.

July 3, No. 27, pp. 1-60

180 Congenital Defect of the Heart. (Caso di vicio congenito del corazon. Persistencia del orificio de Botal con estenosis de la pulmonar.) L. Orioli.

181 Ergot. (Cornezuelo de Centeno. Sclerotium clavus DC.) J. A. Dominguez.

Ugeskrift for Læger, Copenhagen

July 24, LXXV, No. 30, pp. 1247-1290

182 Study of the Antiproteolytic Substances in the Blood During Pregnancy. (De antiproteolytiske Stoffer i Blodet under Svangerskabet.) S. A. Gammeltoft.

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